Auto unity Carmakers have endorsed a plan calling for the industry to use a single XML-based data exchange. **PAGE 10.**

Presence requested The technology gains strength as collaboration and communication platform. **PAGE 28.**

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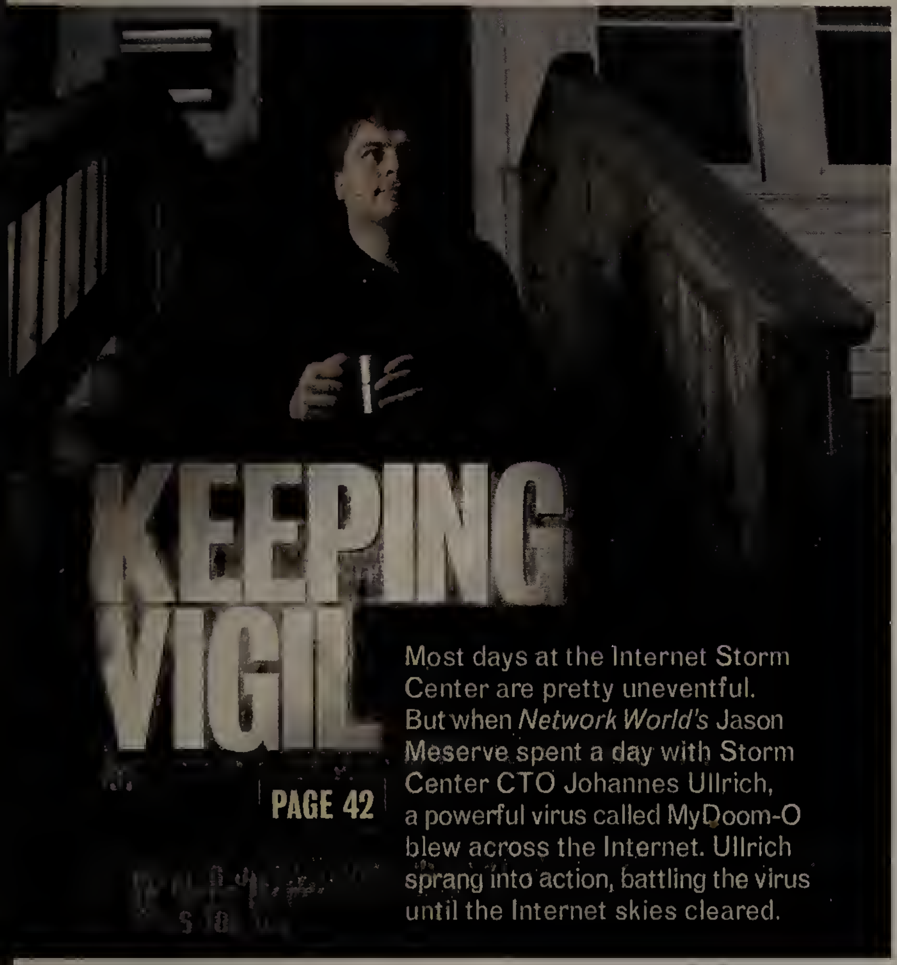
September 6, 2004 ■ Volume 21, Number 36



Most days at the Internet Storm Center are pretty uneventful. But when *Network World's* Jason Meserve spent a day with Storm Center CTO Johannes Ullrich, a powerful virus called MyDoom-O blew across the Internet. Ullrich sprang into action, battling the virus until the Internet skies cleared.

FURNALD/GRAY

LAN services to get new look

■ **BY TIM GREENE**

Major service providers could begin offering high-bandwidth, low-cost Virtual Private LAN Services next year if the proposed standard for the Ethernet/Multiprotocol Label Switching-based technology is approved by year-end as expected.

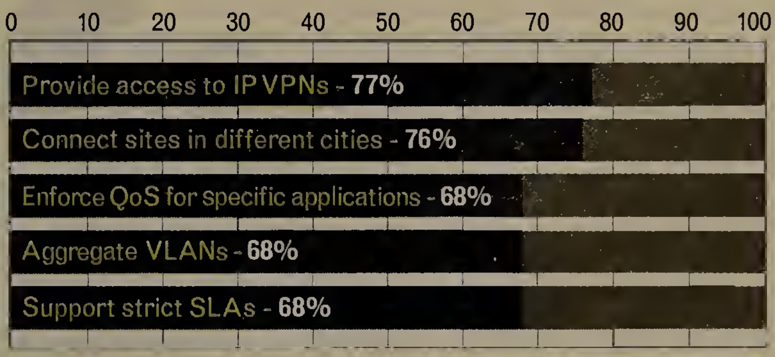
Major U.S. carriers including AT&T and MCI are kicking the tires on VPLS — a LAN extension service that supports service-level agreements (SLA) and QoS for individual applications (see story, page 59).

AT&T says it is premature to comment in detail but confirms that the company is working on a service, adding that there is no timetable for deployment. MCI says it is looking at a variety of Layer 2 technologies it could add to its existing IP VPN services, including VPLS. Verizon already offers an Ethernet service that runs over its MPLS core network, but it is not based on VPLS.

See VPLS, page 59

Why VPLS?

These features ranked highest among 308 users asked what they wanted most from Ethernet services such as VPLS.



SOURCE: THE YANKEE GROUP, 2004
Percentages are based on the top two responses from each user.

Vendors heed cry for compliance mgmt. tools

■ **BY DENISE DUBIE**

Suppliers of management software are jumping on regulatory compliance concerns by delivering a raft of tools that do everything from sound alerts when systems drift out of whack to automatically remediate problems and generate reports that can be used in audits.

Management veterans such as Computer Associates and niche players such as Ecora are betting that businesses faced with penalties ranging from $100 for inadvertent violations to $250,000 for

See Compliance, page 14

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A Wider Net

Will the real Bill Gates please stand up?

Billionaires they're not, but Gates impersonators are cashing in.

■ **BY JOHN FONTANA**

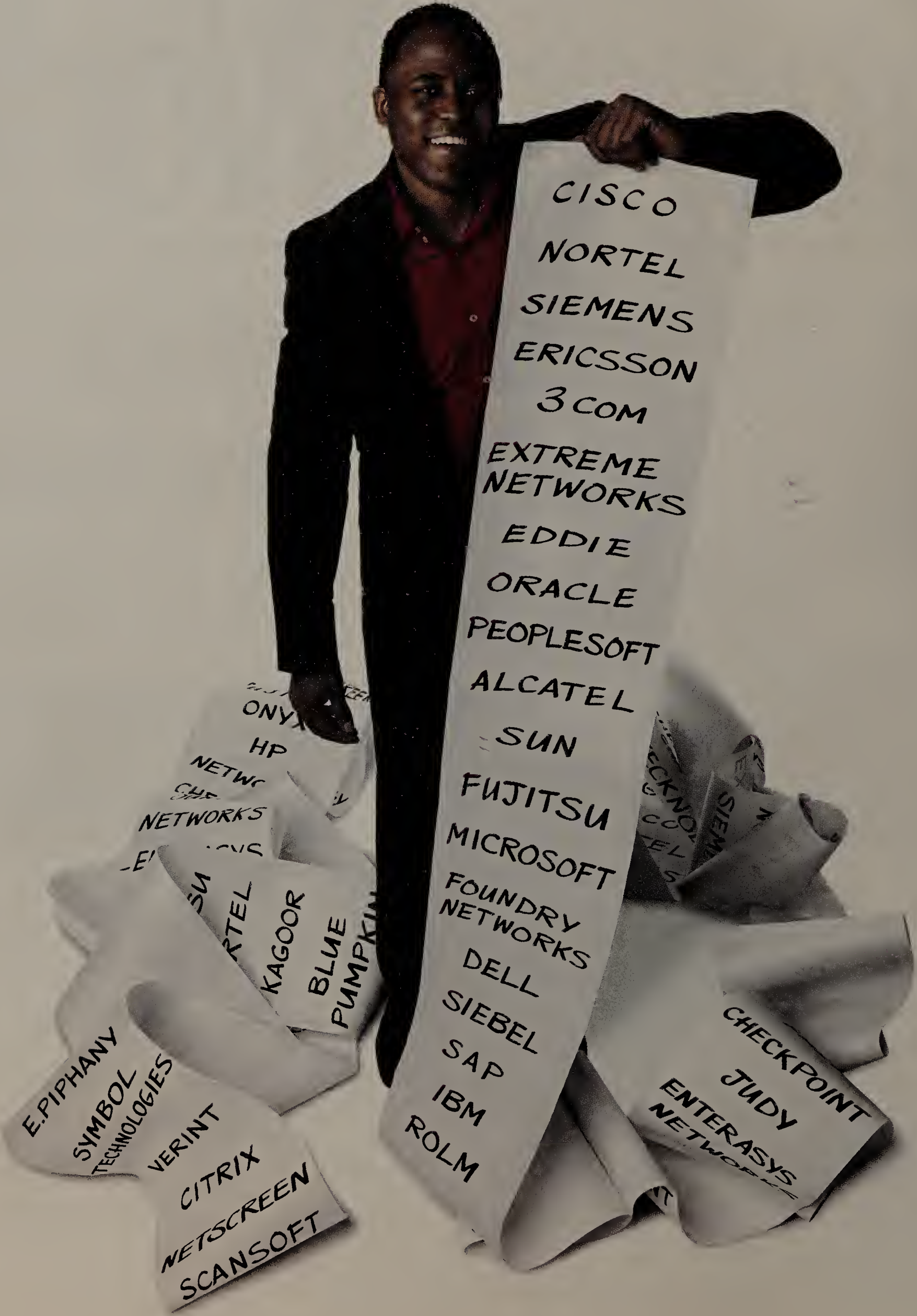
It not only pays to be Bill Gates, it also pays to look like him. Just ask John Ranlett and Steve Sires, two Gates impersonators who don't have to dress up to look like the software maven, and in a truth-is-stranger-than-fiction twist live within 10 miles of each other and not far from the Microsoft campus.

"I tell people it's the water," says Sires, who recalls a man who walked up to him in a grocery store, stared into his face and said, "same father, different mother" before walking away without another word.

Sires, who is three inches shorter and two years

See Impersonators, page 60

Pick the real Gates. Turn to page 60 for the answer.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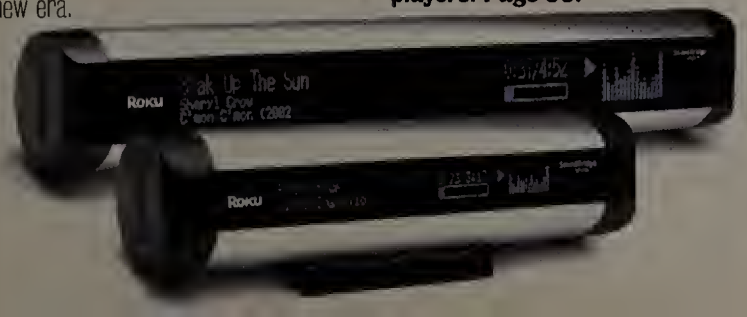

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Voice over Wi-Fi keeps nurses on call. **Page 46.**

10G switch put to the test

CLEAR CHOICE TEST

An exclusive look at Extreme's new 10G Ethernet workgroup switch. **Page 47.**

Keeping vigil over the Internet

We go behind the scenes as Johannes Ullrich, CTO of the Internet Storm Center, battles the MyDoom-O virus. **Page 42.**

PHOTO: FURNALD/GRAY

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Exclusive

Network World Fusion Radio: Microsoft on Sender ID

Get the lowdown on Sender ID, a new framework being considered by the IETF and pushed by AOL and Microsoft that's designed to authenticate mail senders and help eliminate spam and phishing attacks. George Webb, business manager of Microsoft's Safety, Technology and Strategy Group, joins us to discuss the potential impact of Sender ID on your organization. **DocFinder: 3538**

You've Got the Power Survey

Spread your influence by casting your votes in this first-of-its-kind survey gauging crucial questions of industry power, from executive hair styles to comedic appeal. **DocFinder: 3236**

Network Encyclopedia

Get definitions for the technologies, hardware, protocols, standards and more behind networking. **DocFinder: 5548**

Forum: Novell shoots blanks on Linux offer

Wired Windows columnist Dave Kearns took Novell to task for its distribution (or lack thereof) of its Novell Linux Technical Resource Kit. Readers took Kearns to task in this forum. Read his column, then add your thoughts. **DocFinder: 3539**

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Columnists

The Wireless Wizards

What's the best way to authenticate wireless users?

The Wizards answer a reader who's setting up a wireless network for a college. He wants it to have authentication logon — like when traveling at airports — and wants to know what software is used in public places to handle automated logon/sign-up. **DocFinder: 3540**

Telework Beat

Beyond ergonomics

Net.Worker Managing Editor Toni Kistner examines new research that aims to reduce the risk of home-office hazards. **DocFinder: 3541**

Small-Business Tech

Security appliance for nervous types

Columnist James Gaskin looks at a new ServGate appliance that offers flexibility, but whose partnership with Dell raises questions. **DocFinder: 3542**

HomeBase

Going mobile

Columnist Steve Ulfelder debates the wisdom of dumping his business landline for a cell phone. **DocFinder: 3543**

Seminars and events

Weekly Webcast Newsletter

The Webcast Newsletter brings you information on Webcasts on Network World Fusion — your 24-7 source for the latest solutions and strategies, with links, resources and answers you need. Our Webcasts are highly focused, single-topic briefings from experts in technology. **DocFinder: 2542**

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We've made it easy to access articles and resources online. Simply enter the four-digit DocFinder number in the search box on the home page, and you'll jump directly to the requested information.

News Bits

Spyware can mess up XP SP2 installations

■ Microsoft last week warned Windows XP users to scour their systems for spyware before downloading the free security updates, called Service Pack 2. An Associated Press report quoted Microsoft executives saying some spyware could cause computers to freeze up upon installation. Spyware, which typically attaches to downloaded software such as file-sharing programs, tracks behavior, triggers pop-up ads and can otherwise cause computer problems. Programs such as Ad-Aware and SpySweeper can clean computers of the nuisance. Microsoft recommends users clean their PCs of spyware and back up their data before turning on the auto update feature that downloads SP2. Microsoft said several million businesses have downloaded the product.

Nortel: More angst

■ Nortel last week said it again would delay its restated financials. The beleaguered network company said it would need another month to complete its audit and file restated financials. Nortel said in a statement that "the volume and complexity of the work involved" in the cleaning up and restating of its financials means it will miss its Sept. 30 filing deadline for 2003 and the first half of 2004. The vendor stresses that this is a paperwork issue and wants to make sure that it conducts its restatements thoroughly and accurately. Those promises might not prevent further troubles for Nortel, which has promised to restate results going back to 2001 after an accounting scandal that led to criminal investigation by the Royal Canadian Mounted Police and the U.S. Attorney's office in Dallas. The company also faces civil probes by the U.S. Securities and Exchange Commission and the Ontario Securities Commission.

IM picking up steam

■ More than four out of 10 Americans use instant messaging, and about 11 million use it at work but have mixed feelings about its capability to encourage productivity and foster collaboration, according to a survey released last week by the Pew Internet & American Life Project. In the survey, 68% of those who use IM at work say it is a mixed blessing but mostly a positive experience, while 11% say they can't live without it. But 10% said they wish it would go away. When asked if IM helps improve teamwork, 40% said it did and 50% said it saves time on various tasks. But more than one-quarter of respondents said IM had no impact on saving time. In addition, 47% said IM provides moments of relief from the daily grind, while 11% said it has added stress to their lives. The survey was conducted in February and involved 2,204 adults.

Shades of Knight Rider: Honda, IBM team on talking car

■ Honda and IBM last week announced that the 2004 Honda Acura RL will have an option for a built-in voice-recognition system developed by IBM that will let passengers ask for directions, displaying them in graphic style on a small monitor. It can provide a driver with turn-by-turn spoken instructions, eliminating the need for drivers to take their hands off the wheel. Al Murray, IBM's worldwide sales executive for embedded voice and telematics, said the Honda direction-finding system is the first of its kind that doesn't require manual text-based input to display directions. The IBM-developed speech-based locator works by using the car's GPS equipment to calculate the route for desired destinations. The system also features nationwide dining information, which gives drivers reviews and other information concerning restaurants on their route.

Oracle patches problems

■ Oracle last week released security patches that plug several vulnerabilities reported last month in its database software and other products. Customers should download the patches to fix holes in current and past versions of Oracle's database, application server and management tools, the company said in a security bulletin. It described the holes in its database and application server as "high risk," because a hacker potentially could exploit them to access a server without needing a user account, Oracle said. Last week's bulletin lists all the affected products, which are listed at www.nwfusion.com, DocFinder: 3549.

■ TheGood TheBad TheUgly

Wireless in Philly. Who deserves brotherly love more than a city that offers free or low-cost wireless 'Net access to its citizens? The Associated Press reports that city officials are exploring a $10 million project to turn Philadelphia into the world's biggest wireless 'Net hot spot, possibly by outfitting lampposts with wireless gear. ➤

Asking for trouble. One in three workers uses business e-mail to zip sexual content to co-workers and others, according to a new survey from Web and e-mail filtering company SurfControl. One-third also use 'Net access at work to grab pornography, the survey says.

Legal loot. The SCO Group, in reporting its third-quarter financial results last week, said that a loss of $7.4 million for the period was largely attributable to legal costs involved with protecting its source code in cases vs. companies such as IBM and Novell. SCO says it has come to terms with its law firm to cap legal expenses at $31 million, a number that works for the software maker, based on its $43 million in cash reserves.

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David Rawley of Odenton, Md., is the winner of our latest Weekly Caption Contest. Check in every Monday for the start of a new contest.
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Windows upgrades, licenses getting in sync

■ **BY JOHN FONTANA**

ANALYSIS

Pieces of Longhorn

Microsoft plans to deliver the Longhorn client operating system in pieces instead of a single monolithic upgrade. The move should help rescue corporations from a forklift upgrade, and align with Microsoft's software maintenance model.

Components	Description	Planned delivery
Indigo	Set of middleware APIs for distributed systems, service-oriented architecture.	2006 with support for Windows XP, Server 2003 or Longhorn.
Avalon	Presentation subsystem for building applications.	2006 with support for XP, Server 2003 or Longhorn.
Longhorn client operating system	Indigo, Avalon plus performance, reliability and security enhancements.	Second half of 2006 as an XP upgrade.
WinFS	Storage subsystem provides search, data organization and data management capabilities.	Beta in 2006; expected shipment in 2007 for Longhorn.

A byproduct of Microsoft's overhaul of Longhorn is that the company's operating system development road map now aligns more closely with its software maintenance model, which presents users with licensing options that could help end monolithic upgrades.

The Longhorn revamp means the client operating system's marquee features eventually will be available as individual components and as part of Longhorn's single integrated operating system. The components could boost Microsoft's controversial Software Assurance, a maintenance program for volume licensing contracts. They also could help the program shed its bad reputation by supplying what it needs most, a ready stable of software updates.

That could make Software Assurance more attractive to users, especially after some felt cheated out of upgrades during their first round of contracts.

In addition, many users could get what they want — smaller upgrades that are easier to deploy and cause less disruption on their networks.

"Modularity is important, not only for rolling out new versions of software but also maintaining old ones," says Fred Wettling, infrastructure architect for Bechtel, a San Francisco global engineering, construction and project management firm. "We can't afford to do forklift upgrades anymore. It is costing us millions."

The kicker will be how Microsoft chooses to license Longhorn components.

One thing is certain: Users of the Indigo, Avalon and WinFS subsystems of Longhorn (see graphic) will need a Longhorn license regardless of where those components run, according to Sunny Charlebois, product manager in the worldwide licensing and pricing group at Microsoft.

That requirement could drive users to re-evaluate Software Assurance, with which the promise of a steady flow of updates would replace the anxiety of hoping for a monolithic upgrade before contracts expire.

Charlebois says Software Assurance is winning converts, including 20% to 30% of customers with expiring maintenance agreements called Upgrade Advantage that committed to Software Assurance in the last few months.

If the Longhorn rollout goes as planned, Windows XP users would have the ability to absorb Indigo and Avalon on that platform, then contemplate an evolutionary upgrade to Longhorn sometime in 2006. IDC says XP users represent 51% of Windows desktops. Then in 2007 or beyond, they could decide on rolling out the WinFS storage subsystem for the client and Longhorn Server, completing a timeline that is an incremental upgrade rather than one giant leap.

And it would finally align software development with three-year Software Assurance contracts, which could provide regular software upgrades, the original hallmark of the model.

"The flaw in Software Assurance has been Microsoft's delays in getting new software out," says Dwight Davis, an analyst with Summit Strategies.

Microsoft tried to address that on the server operating side earlier this year, announcing that major upgrades would come every four years with an update release two years after each major upgrade. It made the change so companies could do "longer-term planning and budgeting."

But the plan seemed linked to generating interest in Software Assurance, especially after Microsoft said next summer's "update" release for Windows Server 2003, known as R2, would be made available for no charge through Software Assurance but would require purchase of a new server license for everyone else.

"I can't say if the R2 model is relevant [to Longhorn]," Charlebois says. "What customers asked us for was when to expect updates so we felt it important to set expectations for Longhorn."

Today, licensed users without Software Assurance get feature packs and other add-ons, such as digital rights management technology, but Microsoft plans to substantially reduce those and instead integrate them into update and major releases.

Despite the ongoing backlash against Software Assurance, experts say the table is being set.

"As the model evolves to align the product road map with volume licensing, it begins to favor those that have it over those that do not," says Joe Wilcox, an analyst with Jupiter Research. "Microsoft's problem now is that the [operating system] is not a growth market. It's a maintenance market that has to look at customer satisfaction."

What would be satisfying, users say, is Microsoft figuring out the licensing.

"Instead of Microsoft making technology changes, they should focus more on the business side and the impact on cash flow," says Steve Linstead, program manager for Johnson Controls, a Milwaukee, Wis., supplier of automotive parts and building controls. "If they charge proportionately leading up to full price [payment], you get cash flow on the business side and a better implementation path on the technology side."

But, Linstead says, "If you pay now for what Longhorn is supposed to be and you only get part of it, that will be a problem."

Experts say Microsoft must eliminate that kind of confusion.

"Right now things with Longhorn are vague because there is not a current precedent with the way Microsoft products are sold," says Paul DeGroot, an analyst with independent research firm Directions on Microsoft. "I could have four to five years without licensing costs and have Indigo, Avalon and XP. That is the assumption now. Microsoft owes its volume-licensing customers an explanation on how things will work. What is the value in Software Assurance vs. not having it at all." ■

'Fired-up' Ballmer zings Linux

■ **BY PAUL ROBERTS**

WORCESTER, MASS. — Microsoft CEO Steve Ballmer last week used an address before software industry leaders outside Boston to tout his company's vision, while casting doubt on alternatives to Windows.

Speaking to members of the Massachusetts Software Council, Ballmer said he was excited about the promise of technological advances in the next decade.

"I'm as fired up now as I've ever been in 24 years at Microsoft," Ballmer told attendees at the event. "In the next 10 years, you're going to see more positive change than in the last 10."

Ballmer promoted his company's products as a key to that transformation, including the next version of Windows, dubbed Longhorn.

The company also is working to make its offerings more interoperable with products using other software platforms such as Linux, Unix and XML, he said.

He singled out XML and Web Services as the "big breakthrough" of the next decade that will spur innovation.

Shedding his visionary mantle, he scoffed at arguments that his company's operating system creates a computing "monoculture," and took a swipe at those who would see Linux replace Windows on servers and desktops within companies.

Microsoft's platforms offer better interoperability with the company's other technology, such as .Net, reducing the total cost of ownership of Windows compared with Linux, he said. Linux is available for free but often requires significant effort to integrate and maintain, he noted.

On the touchy issue of security, Ballmer dismissed the notion that Linux is more secure than Windows, saying he open source operating system would be attacked as frequently as Windows if it had as large a share of the operating system market as Windows.

While not perfect on security, Microsoft has a defined process for addressing security vulnerabilities, he said. He said the open source community is "all over the map" when it comes to addressing vulnerabilities in Linux.

Roberts is a correspondent with the IDG News Service.

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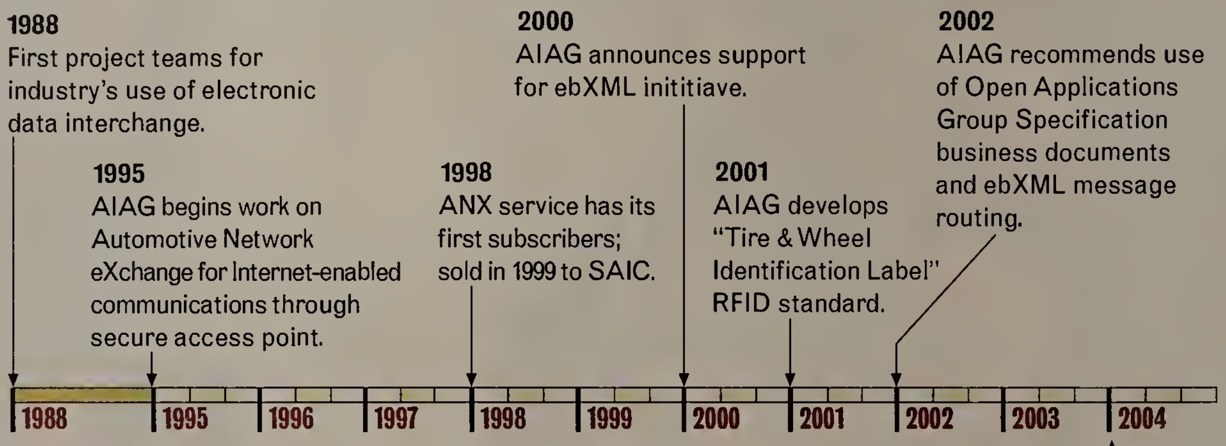
Auto industry pushes for XMLunity

■ **BY ELLEN MESSMER**

Driving the automotive e-biz

The Automotive Industry Action Group, formed in 1988 to address IT issues between automakers and their suppliers has been active in setting data exchange and e-business communications standards. Here are some highlights:



1988
First project teams for industry's use of electronic data interchange.

1995
AIAG begins work on Automotive Network eXchange for Internet-enabled communications through secure access point.

1998
ANX service has its first subscribers; sold in 1999 to SAIC.

2000
AIAG announces support for ebXML inititiave.

2001
AIAG develops "Tire & Wheel Identification Label" RFID standard.

2002
AIAG recommends use of Open Applications Group Specification business documents and ebXML message routing.

2004
AIAG defines first XML-based inventory-management business documents but clarifies it wants to see convergence between two competing XML-based e-commerce standards, ebXML and Web services.

DETROIT — Seeking to reconcile two rival XML standardization efforts while avoiding the costly and complicated process of supporting incompatible systems, General Motors, Ford Motor Company and DaimlerChrysler last week together endorsed a plan calling for the auto industry to use a single XML-based data exchange of business documents.

The format-neutral XML is widely seen as a more flexible method to define sharing business content than electronic data interchange (EDI), the method the auto industry has used since the 1980s. The Big Three automakers and several of their suppliers last week said it makes sense to retool for XML. However, the World Wide Web Consortium (W3C), which offers Web services, and the Organization for Advancement of Structured Information Standards (OASIS)m, with its e-business XML (ebXML) plan, present two similar but competing approaches.

"Both [W3C and OASIS] leverage XML but are largely incompatible," said John Jackson, GM's director of enterprise software, during his presentation at the annual Auto-Tech conference organized by the Automotive Industry Action Group (AIAG). The AIAG is the trade organization that for two decades has brought together the Big Three and their suppliers to hammer out IT issues.

The answer for now, the Big Three say, is they are going to use their collective clout to push W3C and OASIS for convergence on XML standards. Because if that fails, the industry faces an increased risk of interoperability problems and a lower adoption rate for XML, they say.

"If I'm doing ebXML and my partner is doing Web Services, it's not going to work," said Tim Baeten, who leads the technical group at Ford designing the automaker's next-generation interoperability platform. Baeten is also co-chair of the AIAG's B2B Convergence Work Group.

"Convergence" suggests that the W3C and OASIS would agree on a common messaging approach, which is one way Web services and ebXML differ. There's some optimism that demands from the Big Three might help that happen — but perhaps not fast enough for the auto industry.

"I expect convergence, but I don't think it will occur in a reasonable time frame," Jackson said.

Ford already uses Web services to share data with suppliers through its e-Hub portal, while GM and Volkswagen have placed their bets on Web ebXML. Suppliers to the Big Three say they're concerned that if the XML standards issue isn't sorted out early, they will face demands from the automakers to use incompatible products. This issue is a cost and operational burden for parts manufacturers, despite the shift from proprietary networks to the Internet and use of some shared e-commerce facilities such as the Covisint Web portal.

"We're concerned that we don't end up with requirements from customers to do multiple things [with XML]," said Gene Hopkins, director of business-to-business communications at ArvinMeritor, a truck and trailer parts manufacturer in Troy, Mich.

The Big Three carmakers and suppliers last week made it clear they aren't going to sit around waiting for that hoped-for convergence to happen.

Under the auspices of the AIAG, the carmakers this month finished their own XML-defined business documents for auto industry inventory management. They expect to define more business documents by year-end and submit them to OASIS and W3C for review.

They also want software vendors to implement their XML-defined business documents in products. "One thing we learned a year ago is that standards groups and vendors want specific requirements from us," Baeten said.

With the prospect of the auto industry designing a new model of data sharing, Microsoft this year joined the AIAG, sponsoring the Auto-Tech conference breakfast and adding its name to the conference badge-holder.

"We want to help drive this sort of initiative," said John Stenlake, architect at Microsoft consulting services, who spoke during a panel discussion at the conference. Stenlake joined the company earlier this year from Ford, where he was chief software architect. He noted that automakers now see Microsoft as the "800-pound gorilla" at the AIAG on the XML question.

Stenlake said Microsoft is advocating Web services for the auto industry — as is IBM, according to Rob Cutlip, solutions/software architect in the IBM Software Group, Solutions and Strategy Division. Both computer architects spoke during the panel discussion.

"We're not trying to create an abstract layer by committee," Cutlip said. "That doesn't succeed." Though both hope to see convergence, Cutlip said, the reality is that a lot more investment is going into Web Services than ebXML.

Although the AIAG a few years ago expressed official support for ebXML as it was ramping up, the wind seems to be shifting toward Web services if only because AIAG members such as IBM and Microsoft say that's where they are putting their bets.

The bottom line, according to the carmakers striving to work for industry interoperability, is that manufacturers need to be able to buy e-business software that works for the purposes of sharing XML data based on an agreed-upon business model. They want it to be based on standards, but in the end what counts is what works.

"You don't buy from the standards bodies," GM's Jackson noted. "You buy from the likes of Microsoft and IBM." ■

Multicore processor on Intel road map

■ **BY TOM KRAZIT**

Intel will preview a multicore future this week during the Fall Intel Developer Forum in San Francisco as it tries to leave behind a tumultuous year plagued by product delays and road-map revisions.

The company is expected to provide more information about its plans to introduce multicore processors across its product lines by the end of 2005. The multicore concept involves placing two separate processing engines on the same silicon chip.

Several other chipmakers have introduced dual-core chips or revealed plans to build these chips as thermal problems have forced the chip industry to investigate new methods of improving performance that don't involve faster clock speeds. Last week, Advanced Micro Devices demonstrated a dual-core Opteron server processor that is scheduled to arrive in mid-2005.

Intel canceled two future processor cores in May without providing any details about what would replace Tejas and Jayhawk, the code names for the planned successors to the Pentium 4 and Xeon DP processors. The company didn't comment on what prompted the cancellations, saying only that it had realized it could bring multicore processors to market faster than anticipated.

Analysts say they believe Intel's NetBurst architecture for the Pentium 4 and Xeon relied too heavily on raw clock speed to improve performance amid the heat dissipation problems that have accompanied the arrival of the 90-nm process generation.

Intel's Frank Spindler, vice president of the company's Corporate Technology Group, declined to comment on the specifics of Intel's multicore plans during a show-preview conference call, but promised that more information would be revealed this week.

"They have to talk about dual-core. That's the question du jour at this conference," says Kevin Krewell, editor in chief of the Microprocessor Report. The conference attendees that build products based on Intel's technology will want to hear more about the dual-core chips to start working on their own products for next year, he says.

On the enterprise server side, Intel has disclosed its plans for a dual-core Itanium 2 processor code-named Montecito and a dual-core Xeon MP chip called Tulsa, both of which are scheduled to arrive next year.

Krazit is a correspondent with the IDG News Service.

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Microsoft

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>
> *–Laura DiDio, The Yankee Group, April 2004*
> *Linux, Unix, and Windows TCO Comparison*

The Yankee Group, a global research and consulting firm, concluded that a significant switch to Linux from Windows or Unix could cost three to four times as much without delivering tangibly better performance or business value. These findings are based on a non-sponsored worldwide survey of 1,000 IT administrators and C-level executives in midsized and large enterprises.

To get the full study, visit **microsoft.com/getthefacts**

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3Com adds oomph to wireless bridges

Company also expands Crossbeam relationship to resell larger X series appliances.

■ BY JOHN COX

3Com this week plans to unveil a wireless LAN bridge that quadruples the throughput of the company's current line.

The 802.11g bridge can span up to 8 miles between buildings, with throughput of up to 20M or 25M bit/sec, depending on distance. Wireless bridges based on WLAN radios let users quickly set up broadband network connections in place of T-1 lines with ongoing monthly fees or costly fiber runs.

One 3Com customer that intends to buy the new product is Vineland Public Schools in New Jersey. The school district has several 3Com 11M bit/sec 802.11b bridges, which supplement its private fiber network.

The bridges bring the network at the central site to several remote buildings or temporary classrooms, where wireline connections are not practical, says Stephen Dantinne, the schools' technology supervisor.

The 802.11b bridges have worked fine, he says, but more users and more demanding applications are taxing the 5M to 7M bit/sec of throughput. The 802.11g bridge will handle traffic loads for the foreseeable future, he says.

Vineland uses the bridges in one case to extend the network from a school with a fiber link to a rented building across a busy street and a field. "It's not worth $20,000 or $30,000 to string fiber to other sites, where we don't own the buildings or have only a few users," he says.

It also gives Vineland a way to quickly create a relatively inexpensive back-up network in case a length of fiber is cut.

The 802.11g bridge is available in two models, both of which ship later this month. One, about the size and shape of a pizza box, can be mounted outdoors. Under the cover, it has a high-gain 18-dBi antenna, with the 802.11g radio, power supply and other electronics attached behind it. The higher the gain number, in effect, the more sensitive the antenna, and the longer its range. The box costs about $1,600.

Bridge boost

3Com's new 802.11g bridges feature:

- 54M bit/sec line speed, up to 20M or 25M bit/sec throughput.
- Support for spans up to 8 miles.
- Indoor (shown here) and outdoor models.

The second model (see graphic, above) is intended to be set up indoors, such as across a warehouse. You can choose from a selection of panel and omnidirectional antennas, with different gains. The base unit costs $990.

3Com redesigned its bridges to add processing power to support Wi-Fi Protected Access, along with the Advanced Encryption System, says Mark Bisaillon, a product manager with 3Com's WLAN division. Also new is support for a bridging specification called Wireless Distribution System (WDS), which is a part of the 802.11 standard. WDS lets radio devices connect to each other and act as bridges or repeaters.

Security deal

In other 3Com news, the company this week is announcing that it is reselling Crossbeam's multi-service security appliance known as the X Series. 3Com will sell two models under the names Security Switch 7245 and 7280, the former having seven slots and the latter 14. The slots can be populated with server blades that support various security functions including virus protection, firewall and VPN.

These two devices are designed to protect data centers, act as security gateways for large organizations, contain the spread of viruses and worms within LANs and support hosted security services for ISPs.

These two additions to the 3Com line are part of an earlier agreement with Crossbeam to resell the gear. 3Com already resells a lower-capacity C Series Crossbeam box under the name Security Switch 6200.

Network World *Senior Editor Tim Greene contributed to this story.*

Verizon Wireless comes to aid of global road warriors

■ BY DENISE PAPPALARDO

Verizon Wireless now is offering customers the ability to roam internationally while using one phone and one number.

The service provider announced last week that it is exclusively offering the Samsung SCH-a790 Global Phone, a handset that supports two frequency bands for both GSM and Code Division Multiple Access (CDMA).

Verizon Wireless customers will have the ability to roam over Vodafone's international networks that span Europe, Asia, Africa and the Middle East. Verizon Wireless is a joint venture between Verizon Communications and Vodafone.

Verizon Wireless already offers an International Travelers Program in which customers can rent or purchase phones that are compatible with Vodafone's networks overseas. Although customers cannot use their domestic CDMA phones overseas with this program, Verizon supports call-forwarding to the international phones so users don't miss calls.

Verizon Wireless is targeting international travelers with the Samsung SCH-a790 Global Phone, which works across GSM and CDMA networks.

But users cannot forward their address book or contact lists to the rented phones.

The Samsung SCH-a790 device eliminates the need to rent a phone or even own two phones for international travel.

Placing calls from outside the U.S. typically costs $1.29 per minute, unless calling from Maldives, Indonesia, Sri Lanka or Latvia, where calls cost $2.49 per minute.

Charges for placing calls within the U.S. are part of a customer's monthly America's Choice calling plan. Prices depend on the user's plan.

The cost of calling from the U.S. to other countries ranges from 60 cents per minute up to $2.49 per minute. For a full list of per-minute rates go to www.nwfusion.com, DocFinder: 3547.

The phone costs $350 with a two-year wireless service contract. ■

Content switch coming from Sun

■ BY ROBERT MCMILLAN

Sun later this month plans to unveil its first-ever content switch: a load-balancing and Secure Sockets Layer acceleration switch based on the Nauticus N2000 products that the company acquired in January.

Sun plans to ship its new, unnamed switch by year-end and will deliver early versions of the product to select customers in time for a press and industry partner event, to be held Sept. 21 in New York, says John Fowler, executive vice president of Sun's Network Systems Group.

Rather than simply shuttling network traffic from point to point, content switches are aware of the content of the network traffic they switch and are designed to perform certain network processing tasks — such as server load balancing or SSL encryption — that would otherwise bog down servers on the network.

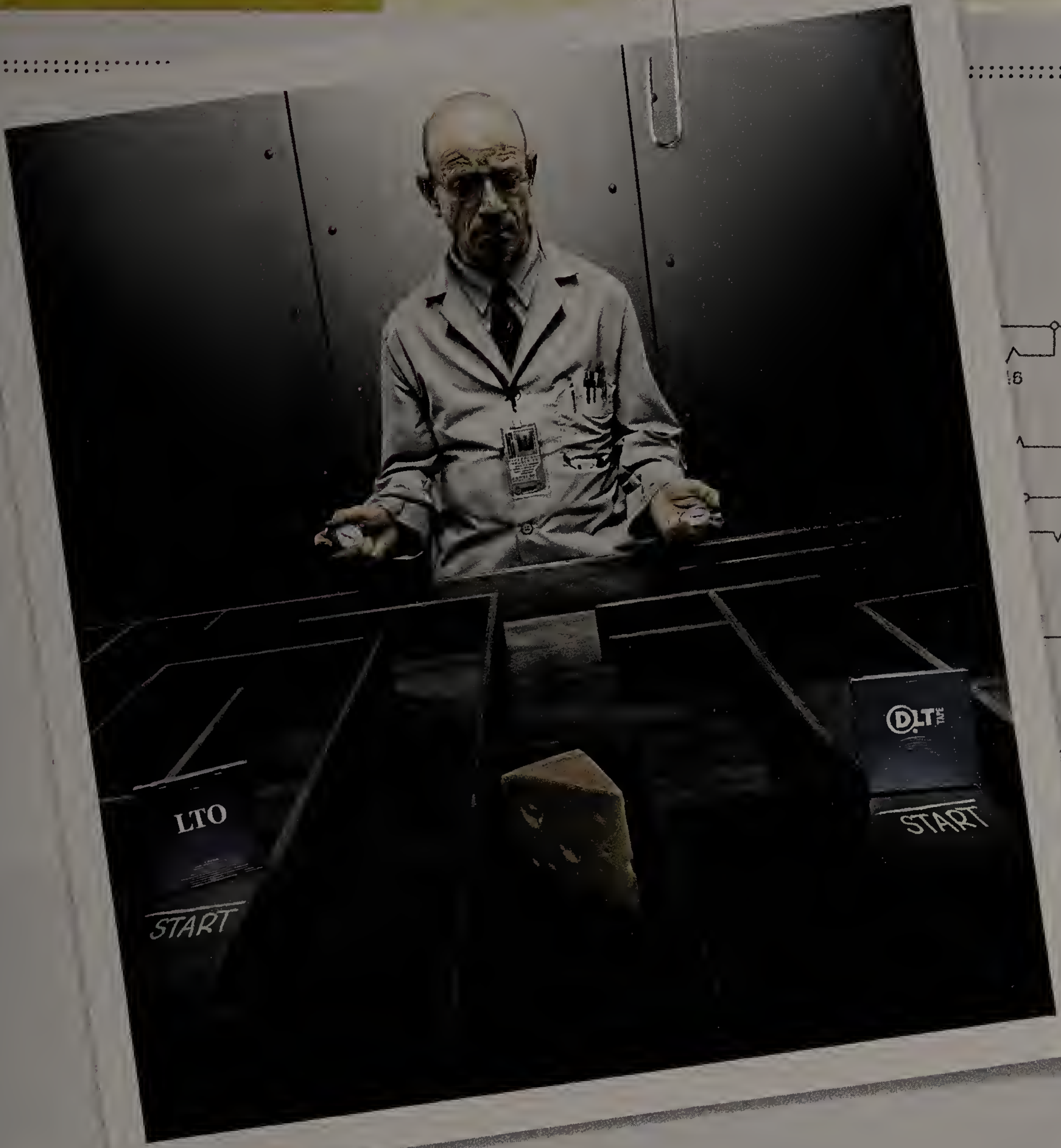
The switch also has a "virtualization" capability that lets customers run a number of disparate networks on one switch, Fowler says. "It has the ability to partition and have a whole bunch of different routing domains or policy domains." The Sun-branded switch will be integrated with Sun's N1 management software.

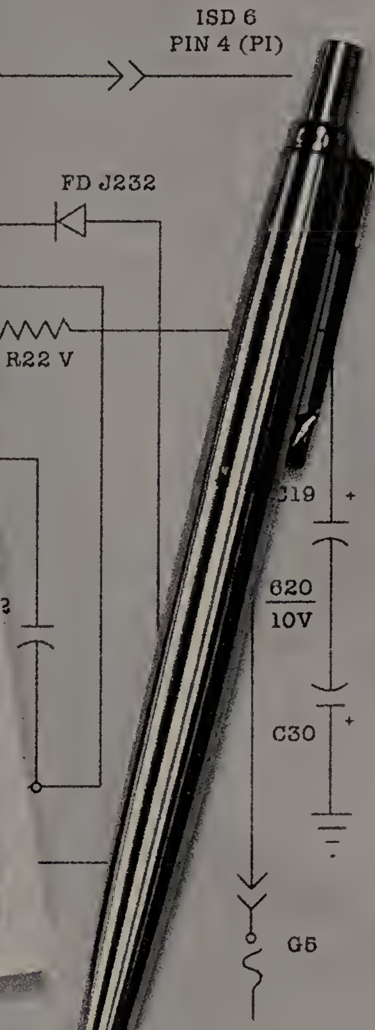
Until now, the only network products that Sun has sold have been network cards for its systems, a virtualization switch for the company's StorEdge 6920 storage system and network switching products that go into Sun's blade servers, Fowler says.

Sun's decision to move into the content switch market came as a surprise to some analysts, who say that the move runs the risk of antagonizing Cisco, a long-time Sun partner, which paid $5.7 billion in stock four years ago to acquire content switch vendor ArrowPoint Communications.

McMillan is a correspondent with the IDG News Service.

SDLT 600 vs. LTO-2





TEST #345

	SDLT 600	LTO-2	TIE
Superior cognitive memory skills :	☐	☐	☑
Highest capacity :	☑	☐	☐

COMMENTS

TESTED BETTER

In repeated time trials between the SDLT 600 and LTO-2, neither tape ever reached the cheese, or even left the starting line for that matter. Perhaps the tapes don't like cheese. Or maybe, (and this is highly speculative, mind you) it's because they don't have any legs? We may never know the truth. However, when it comes to data backup capacity, the SDLT 600 was the clear winner thanks to a **whopping 50% more capacity than LTO-2. The SDLT 600 is also 20% faster** and includes DLTSage™ diagnostic management software and DLT*Ice*™ archival WORM functionality. How do we know? It's been tested. For more info and to download the whitepaper, visit DLTtape.com

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Compliance

continued from page 1

deliberate disclosure of healthcare information would rather invest in software than take their chances with an audit.

Sixty percent of 500 IT executives *Network World* surveyed earlier this year concurred, saying that ensuring compliance with regulations over the next 12 months is "extremely important." Close to half of the respondents also said they will upgrade their applications or purchase new applications this year to ensure compliance with regulations.

"Vendors are drooling over the fact that IT shops need to comply with regulations, and right now they are preying on customer ignorance and panic to meet deadlines," says Mike Neuenschwander, a senior analyst at Burton Group. Yet vendor promises aren't totally without merit, he adds: "Vendors can provide tools to help automate the work needed to verify that a company is compliant, but there is no suite of products to ensure you're compliant."

While application suppliers such as Oracle, PeopleSoft and SAP are adding features to improve financial and other reporting processes, management vendors say their tools will help customers ensure their systems, security measures and management processes are in line with regulations such as the Sarbanes-Oxley Act, Gramm-Leach-Bliley Act and Health Insurance Portability and Accountability Act (HIPAA).

The general idea is that once a company determines how to be compliant and has its policies in place, management software can automate the processes needed to stay compliant. That can range from tracking and documenting changes to monitoring system access and usage to producing reports specific to regulations.

Configuration, desktop, and identity and security management wares are being pushed as compliance tools, and industry watchers say they can help IT teams monitor and document their compliance efforts.

"Operational reporting, proper notification and escalations, and basically keeping track of who people are and what they are doing needs to be automated for IT shops to realistically tackle compliance," says Mike West, senior program director at Saugatuck Technology Research.

IT managers agree. Jim Vellella, associate director of ISD Technical Services at the University of Pittsburgh Medical Center in Pennsylvania, says HIPAA requires "IT to be able to provide clear, concise, authoritative monitoring and documentation of the security measures" in place, and the ability to alert and report on any deficiencies. He uses Ecora software to provide the monitoring and reporting required by HIPAA.

"We simply do not have time or staff to provide the type of consistent, repeatable analysis and reporting on hundreds of systems that an automated product like Ecora provides," he says.

Ecora's change and configuration software can be installed on an administrative workstation to collect data from multiple operating systems, including Microsoft, Unix and Linux, and network devices from the likes of Cisco. The software also can retrieve data from Active Directory, Exchange, NetWare, Citrix, Oracle and other systems. It then compares the data against a pre-defined model of a compliant configuration and alerts staff to exceptions and unacceptable changes.

The new tools also can help IT meet new process requirements. For example, Sarbanes-Oxley's Section 404 requires companies to establish and certify a system of internal controls and processes used to obtain financial results. That means IT needs to be able to prove that financial data followed a specified workflow across multiple systems and restrict data access to authorized users.

James Kritcher, vice president of IT at White Electronic Designs in Phoenix, says the public semiconductor packaging company stays on top of Sarbanes-Oxley using Ecora software in concert with processes spelled out in the IT Infrastructure Library and Control Objectives for Information and related Technology. The combination should help ward off potential audits.

"There is no [set of generally accepted accounting practices] for IT that tells you how to get through an audit," he says. Ecora's software scans his network for IT issues that could cause compliance problems, such as a firewall that is open to attack or a server that is not properly patched.

"We use the software to take a baseline of all our configurations and compare what we have against how it should be," Kritcher says. "It helps us document that we are taking the proper steps."

In Charles Revei's case, HIPAA requires him to ensure privacy for patient data, including information stored in multiple IT systems. The computer operations manager at Maryland General Hospital in Baltimore says he uses features in ScriptLogic's Desktop Authority to push out HIPAA-compliant security policies and software patches to client machines on a one-to-many basis. "When I make a change to our overall security model the software will push out the policies to the entire infrastructure," he says.

ScriptLogic software also gives his staff the power to shut down clients remotely when a breach is suspected. "If a general-use PC on the campus had access to a patient care system, and for some reason that was left unattended or an unauthorized user accessed it, we can limit that access remotely," Revei adds. (Read more about ScriptLogic, page 17.)

For all the advances, no single vendor offers a solution that addresses all IT compliance needs. Still missing from vendor offerings, Vellella says, is the capability to monitor multiple operating systems, platforms and applications. He says it would be ideal to have software that provides an end-to-end view from "desktop to Web portal to application server to database server" that would automate the correlation of compliance events between disparate systems and prevent IT managers from having to manually compare data to determine the source of a problem.

Also, the features provided in management software can only address IT processes and policies. Industry watchers say IT shops must align their compliance policies with their specific businesses. "Every industry is regulated now, and there isn't one product that provides compliance rules for all the regulations," Burton Group's Neuenschwander says.

He also warns IT not to view compliance as a one-time project with a set end date: "Compliance requires ongoing process and policy improvements."

White Electronic Designs' Kritcher agrees. "Compliance is a moving target," he says. "You become compliant for one regulation and then breathe a little easier, but it's factored into our budget and staffing for the long term." ■

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Compliance toolbox

IT vendors are taking a variety of approaches to help customers meet regulatory compliance standards.

Change and configuration management:
Involves the collection of configuration data from network devices and systems, tracking access and changes made, scanning for compliance with pre-defined policies, alerting IT managers to breaches and generating reports for audits. Sample products: Ecora's Enterprise Auditor, Intelliden's Compliance Manager.

Desktop management:
Based on the pulling or pushing of data between a centralized management console and client machines; scanning of desktops for software license, usage and virus data; and providing remote control abilities to restrict access to workstations. Sample products: ScriptLogic's Desktop Authority, Altiris' Asset Management Suite.

Identity management:
Monitoring access and usage on systems and devices, provisioning user accounts and privileges, securing access with single sign-on and password management, and providing workflow tools for regulatory compliance. Sample products: Thor's Audit and Compliance Manager 8.0, Courion's Compliance Courier.

Security management:
Scanning desktops, server and application systems for vulnerabilities, identifying violations with pre-defined policies, collecting data about compliance security efforts and producing reports relevant to compliance. Sample products: Computer Associates' eTrust Vulnerability Manager, IBM's Tivoli Security Compliance Manager.

IBM rolls out low-end storage systems

■ **BY DENI CONNOR**

IBM last week expanded its storage systems with the introduction of two arrays that should help small and midsize businesses and workgroup and departmental users more easily store database, e-mail and Web serving data.

The TotalStorage DS300 is an iSCSI array that attaches to the Gigabit Ethernet network and is designed for midsize businesses that might not want to deploy more-expensive and complex Fibre Channel storage-area networks. The array, which can be expanded to as much as 2T bytes, features hot-swappable Ultra320 SCSI drives and power supplies, and a battery-backed data cache for redundancy.

The TotalStorage DS400 is a 2G-byte Fibre Channel array that scales in capacity to 5.8T bytes. It is available in a 3U-high enclosure.

Analysts say these arrays are appropriate for the departmental, and small and midsize enterprise market.

"ISCSI is the way to go for the SMB market, especially the small segment," says Stephanie Balaouras, senior analyst with The Yankee Group. "Yankee doesn't believe that small and midsized enterprises will be willing to introduce Fibre Channel into their environments because it's too complicated."

Balaouras estimates that 60% of these organizations typically spend less than $60,000 a year on storage and 40% of them need storage capacity ranging from 1T to 10T bytes.

Both systems ship with IBM's ServeRAID management software and run Windows and Linux. They also include Global Mirror and Global Copy software, which lets customers replicate data for disaster-recovery purposes.

Each system is rack-mountable and can be configured with single or dual controllers. Each controller supports redundant data paths.

The systems are intended to compete with HP's Modular Smart Arrays and the Dell/EMC AX100. IBM positions the DS300 and DS400 as suitable storage systems for its eServer xSeries and BladeCenter rackable systems.

The DS300 starts at $4,650; the DS400 starts at $7,200. Both systems are expected to ship later this month. ■

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Veritas buys e-mail archiving stalwart

■ BY DENI CONNOR

Veritas Software last week expanded its data protection and management portfolio with the $225 million acquisition of KVault Software, a leading supplier of e-mail archiving software.

KVault's KVS technology, dubbed Enterprise Vault, gives Veritas another tool to offer customers that are attempting to meet compliance regulations such as those outlined by the Securities and Exchange Commission.

"KVS is both a market and mind-share leader," says Peter Gerr, an analyst with Enterprise Strategy Group. "The company helped establish e-mail and message archiving as a very important line of defense against compliance threats."

Not only does software such as KVS' help companies better track e-mail, but it also conserves storage resources, Gerr says.

KVS says its software is used to manage 1.7 million users' e-mail.

Gartner projects that e-mail migration and archiving will grow at a 57% compound rate through 2007 as companies rush to comply with regulations such as the SEC's Rule 17a-3 and -4 and Sarbanes-Oxley, which require that e-mail and instant messages be preserved.

This helps explain why e-mail archiving companies have become hot properties. Last year, EMC bought Legato Systems' e-mail archiving product, HP acquired Persist Technologies, and Connected purchased Archive-it. Earlier this year, Zantaz snapped up Educom TS, and last week FrontBridge Technologies bought MessageRite.

IDC says e-mail traffic has tripled in the past five years.

The acquisition of KVS, which leaves Veritas with $2.5 billion in cash and short-term investments, is one in a long string of buyouts that the company says back its vision of automating the management of data center networks.

KVS' Enterprise Vault is designed specifically for Windows environments. It enables archiving of e-mail and files from Microsoft Exchange SharePoint and Office, and documents created by Microsoft file systems.

Veritas says it plans to integrate its Windows-based Data LifeCycle Manager, formerly known as NetBackup Storage Migrator, into Enterprise Vault.

Big spender

Veritas has increased its resources through $900 million-plus in acquisitions over the past few years.

Company acquired	When	Amount	Technology focus
NuView	August 1999	Not disclosed	Cluster management
The Kernel Group	January 2002	Not disclosed	Backup and recovery
Precise Software	December 2002	$537 million	Performance management
Jareva	December 2002	$62 million	Server automation
Ejasent	January 2004	$59 million	Provisioning
Invio	July 2004	$35 million	Process automation
KVault Software	August 2004	$225 million	E-mail archiving

"KVS is a great catch for Veritas," says Aaron Huslage, senior system administrator for supply-chain management company CNF Service in Portland, Ore. "KVS' Enterprise Vault is easier to deal with than Storage Migrator, that's for sure.

"Veritas has been looking for a way to get into e-mail archiving in a bigger way," he says. "Even though Storage Migrator on Unix is great, Storage Migrator on Windows was a little bit funky."

Sources say Storage Migrator for Unix will be integrated into a future Unix-based version of Enterprise Vault.

Veritas will run KVS, based in Berkshire, England, as a subsidiary. KVS had 2003 revenue of $23 million and is the only company listed in the "Leaders" position in Gartner's Magic Quadrant for e-mail active-archiving products. As much as 25% of KVS' installations are on EMC's Centera, considered by many to be the front-runner in compliance hardware. ■

CA updates IT service mgmt.

■ BY DENISE DUBIE

Computer Associates this week will unveil five upgraded applications that are designed to work together at helping customers deliver and manage IT services.

The upgraded pieces of CA's Unicenter IT Service Management suite include:

- Service Catalog 2.2, which helps manage user requests and defines services.
- Service Fulfillment 2.2, which automates processes and kicks off actions such as trouble-ticket generation.
- Service Meter 2.2, which tracks IT services usage.
- Service Assure 2.2, which helps IT staff and business units define service-level agreements.
- Service Accounting 2.2, which quantifies the IT service in financial terms.

The products can be purchased separately or as part of a suite, and CA now has let them share common definitions, workflow and process data.

"Rules in the products are now defined in a consistent manner, which also produces a more common user interface," says Lokesh Jindal, a director of product marketing at CA. "Maybe in the past, provisioning was defined one way in Catalog and another way in Fulfillment. Now the guts of the technology architecture are the same."

The software is designed to be part of an IT service management scheme, which encompasses multiple products and processes to let companies deliver the infrastructure and application resources that end users need to perform their jobs or fulfill customer demands. For example, maintaining an SAP application or keeping e-mail up and running could be defined as an IT service. According to Summit Strategies, typical IT service management implementations are phased into production over the course of three to five years, and products are generally not available as out of the box from one vendor.

"It's a huge undertaking to collect all the data, report on it and associate it back in terms of the cost and service levels required for the business," says Mary Johnston Turner, vice president and practice director at Summit Strategies.

Frameworks such as the IT Infrastructure Library (ITIL) and Control Objectives for Information and related Technology offer guidelines for establishing processes, and vendors such as CA provide software and services to support the processes. CA says its upgraded applications follow the ITIL framework. CA's service management software competes with that from BMC Software, HP and Peregrine.

Setting it up

CA's Service Catalog is installed on a dedicated Unix, Windows or Linux server, and network managers authorize administrators to be able to access the software directly to define services that an IT shop can deliver. End users also can define the types of IT services in a self-service Web user interface. Service Accounting and Service Assure work similarly.

Service Meter also uses software installed on a server, and either queries network, systems and client devices for usage data or deploys agents to collect the information from disparate machines. Service Fulfillment, also installed on a server, can work stand-alone, but CA says it is best used when integrated with other management tools to kick off corrective actions or generate trouble-tickets.

The products could require customers to contract professional services. CA says a typical large corporate implementation of several products in the suite could cost about $500,000. ■

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ScriptLogic beefs up desktop mgmt. tools

■ **BY JOHN FONTANA**

ScriptLogic last week introduced the latest version of its desktop management software with an eye toward helping corporations support the rollout of Windows XP Service Pack 2.

Desktop Authority 6.0 adds a slew of features, including configuration settings for enabling or disabling XP SP2's personal firewall, and opening and closing ports so that certain applications work properly. The software also has a new administrative interface that provides a centralized view of configuration settings and corporate desktops, and new profile management features for Outlook.

Desktop Authority lets users remotely set, change and manage configuration settings on corporate desktops. The new version emphasizes a "pull" model, with the desktops initiating communication with the Desktop Authority server.

ScriptLogic supports that model by acting as the logon script when users sign on. With the pull model, the software can circumvent the XP SP2 firewall, which by default locks down ports used by remote management software such as Desktop Authority. Instead of desktops running the Windows logon script, Desktop Authority takes over as the logon script and loads configuration information to desktops when they attach to the network and before the firewall is activated.

Customer reaction

Users are hoping that model will help make desktop management easier with XP SP2.

"If I can get remote management to work with the XP firewall, I will leave the firewall on for some desktops," says Philippe Vanier, director of IT at the Hebrew Academy in Montreal. But Vanier says he is still working on getting Desktop Authority and the XP SP2 firewall to work together smoothly.

The Windows Firewall Management feature uses configuration changes to close and open ports that let the desktop communicate with networked servers, such as a desktop anti-virus agent downloading signature updates.

On top of the new features in the XP SP2 firewall, Vanier says the Windows Explorer-like interface is a big improvement.

"Everything is centralized. I see everything in one view," he says. The new interface presents a tree structure based on a company's organizational makeup and shows which settings will be applied to which sites, departments and organizational groups.

ScriptLogic also has expanded its Enterprise Profiles feature within Desktop Authority to let administrators design hierarchical configuration settings that can include up to 28 management objects such as drive mappings and printer assignments. The software's Validation Logic, which confirms the specific sets of users or computers that will receive system modifications, now supports multiple rules within each Enterprise Profile, with each rule supporting up to 20 validation tests.

Desktop Authority also has expanded its Outlook management feature with settings for creating standardized configurations of the e-mail client software.

Desktop Authority 6.0 costs $26 per user.

ScriptLogic competes with Microsoft, LANDesk, Altiris, Configuresoft and others with its configuration management tools. ■

Opnet tackles configuration mgmt.

■ **BY DENISE DUBIE**

Opnet Technologies last week said by next January it would join the growing number of management vendors offering users software applications designed to monitor, report and track configuration data and changes across multi-vendor network devices.

Opnet's Network Configuration Management software will install on a dedicated server and use native device APIs to collect configuration data. The software will store device data, query the devices on a scheduled basis to track changes and then compare changes made against predefined configuration policies or rules. Network Configuration Management also will integrate with Opnet's IT Guru and NetDoctor, which can apply more than 400 rules on routing and security implications of changes made to devices. The software will include capabilities to let users add their own rules to the software.

The company told *Network World* last week that it would make its Network Configuration Management software generally available to customers early next year. Pricing will be announced then.

"Opnet is already collecting configuration data and building models of networks and applications, so this is a natural evolution of the technology," says Glenn O'Donnell, program director at Meta Group. "It compares the configuration data against the ideal policies the company wants to maintain, and now Opnet is providing more visibility into changes and their impact."

Opnet competes with AlterPoint, Cisco, Intelliden and Voyence. ■

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Short Takes

Start-up **Orion Multisystems** last week unveiled its **Orion Cluster Workstation,** which packs the power of a PC cluster into a desktop-size package that uses low-power chips and an innovative motherboard design, the company says. The Orion Cluster Workstation takes the idea of a cluster to the desktop. Orion's first product, the DT-12, is a 12-node cluster that measures 18.4 inches long by 24 inches wide by 3.8 inches high, about the same as a conventional desktop PC. But this PC puts out about 18 gigaflops of sustained performance, and 36 gigaflops of peak performance under certain conditions. Transmeta's 90-nanometer Efficeon processors are why Orion can pack so much performance into a small package, the company says. The standard board features 12 nodes on each board, and a 12-port Gigabit Ethernet switch. A base configuration of Orion's DT-12 desktop system comes with 512M bytes of memory per node and a 160G-byte hard drive for $9,000 to $10,000. The desk-side systems will start at 48-node configurations and are expandable up to 96 nodes. Pricing for those configurations is yet to be determined, but the 96-node configuration should cost less than $100,000, the company says.

Dell last week introduced a desktop support services suite designed for companies with overstretched IT staffs. Called **PC Workspace Services,** the suite includes asset tracking, a support Web portal and on-site visits from field technicians, and 24-7 help desk functions. Dell previously provided some of the services included in this suite but not as part of a single program. Some of the tasks Dell performs as part of the PC Workspace Services are installation, repairs, moving users to new locations and software support. The menu of services can be customized based on a client's needs and can cost as little as about $20 per desktop, per month, for a basic offering with 24-7 help desk support.

10G still prepping for big dance

Prices fall, new standards make technology more practical — but challenges remain.

BY PHIL HOCHMUTH

While not yet a technology for the masses, more corporations are adopting 10G Ethernet as prices fall and vendors refine their 10G product portfolios.

Whether 10G Ethernet is ready for widespread corporate deployments in switches, wiring closets and desktops is debatable. But what's inarguable are the changes in the technology over the past few years and efficiencies in manufacturing that have decreased prices by more than 85% since 10G gear was introduced in 2002.

While the average 10G Ethernet port cost more than $55,000 in 2002, that price dropped to $15,000 per port a year ago and now averages about $7,500, according to Synergy Research Group. At the same time, port shipments of 10G Ethernet have increased; only 1,000 ports were shipped in all of 2002, while more than 15,000 were sold in the first half of this year.

The lower prices for 10G Ethernet are the result of less-expensive optical components from suppliers. One area of advancement has been in 10G Ethernet physical layer connections — the lasers that shoot and receive transmissions of light over fiber. Newer modular port technologies, such as XENPAC and XFP modules, are examples of these lower-cost ports.

"We've seen lower costs on the optical part of it with the development of new optics like XENPAC and other kinds of optics that are less expensive to manufacture," says Richard Nelson, director of computing at the University of Southern California's Information Sciences Institute (USC-ISI). The Los Angeles organization, the computer research arm of USC, runs many Foundry Networks 10G Ethernet switches in its backbone and to connect to other USC campuses.

Tighter-designed components also has led to switch companies offering multi-port 10G Ethernet blades that are non-blocking and relatively inexpensive. Vendors are packing up to four full-duplex, non-blocking ports onto one card with up to 40G bit/sec of bandwidth between the modules.

"The four-port blade is really popular," says Joshua Johnson, an analyst with Synergy Research Group. Cisco, Enterasys Net-

See 10G, page 22

10G Ethernet, pro and con

Observers say 10G Ethernet might be on the brink of widespread adoption, but other say the technology is still a few years off.

Give me 10G now because . . .

- 10G pricing has dropped 86% in two years.
- Demand for apps such as IP video and peer-to-peer soon will drive up bandwidth needs.
- It's time to upgrade desktops to Gigabit and the core to 10G bit/sec Ethernet.

I'll wait on 10G because . . .

- It's still less expensive to link Gigabit connections for higher-bandwidth trunks.
- It might require major upgrades to backbone switches and cabling infrastructure.
- I'm waiting for a copper-based standard.

F5, Redline launch data center gateways

BY PHIL HOCHMUTH

F5 Networks and Redline Networks this week are set to launch versions of their respective Layer 4-7 switch/traffic accelerator boxes, with both vendors promising improved application performance and security for corporate data centers.

From F5 comes the first update in two years to its Big-IP Layer 4-7 switch. The new box could help customers run application servers faster with better security, the vendor says. Redline says it's offering a similar promise to data center architects with a box that can speed application performance by caching instances of applications such as SAP or Oracle in memory.

F5 says it has rewritten its Layer 4-7 switch operating system from scratch. The new system lets IP traffic be controlled, filtered and secured on a finer level than it could be with previous Big-IP versions.

The new platform from F5 is long overdue, since F5 stopped adding major new features to its Big-IP platform several years ago, says Peter Firstbrook, an analyst with Meta Group. "They were kind of tapping out with old Big-IP platform."

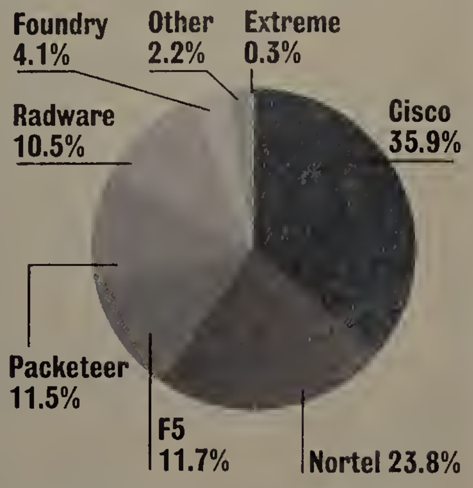
F5's Traffic Management Operating System (TM/OS) differs from past Big-IP platforms in that the software lets an F5 switch inspect traffic flows and apply policies to traffic on a request and a response basis. This means Layer 4 and Layer 7 switching happens on both the server side and client side of the network. F5 says this "application proxy" capability lets the switch associate packets with certain applications and identify exchanges between clients and servers on an IP network. This also can be used to remove ancillary information in packets from a Web site or cookies.

"This could include what operating system a business is using, or it could contain other sensitive proprietary information,"

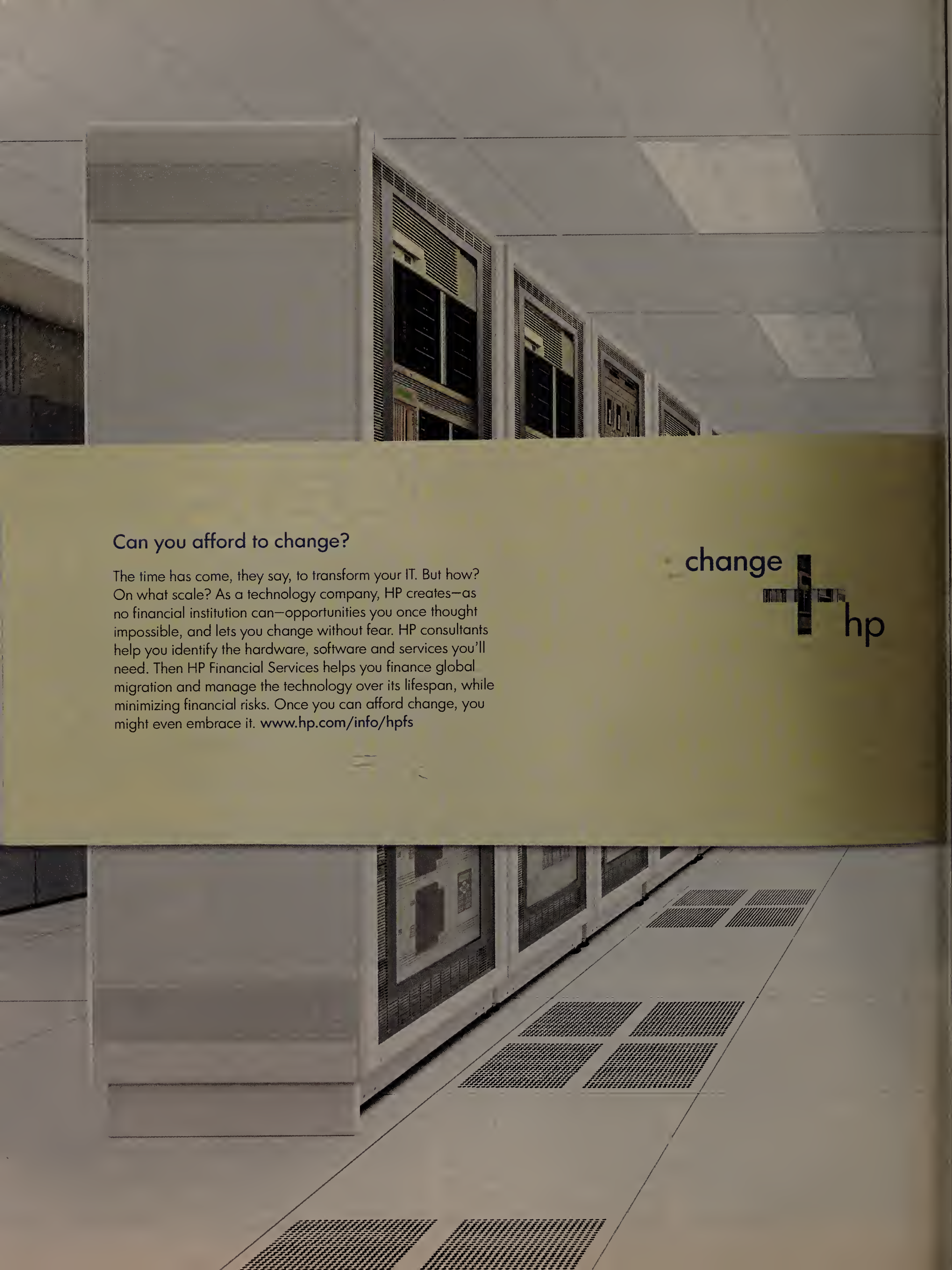
See Redline, page 22

Up for grabs?

Unlike the Cisco-dominated Layer 2-3 switch market, Layer 4-7 switching is a more wide-open arena.



Revenue for Q1 and Q2 2004: $302,423



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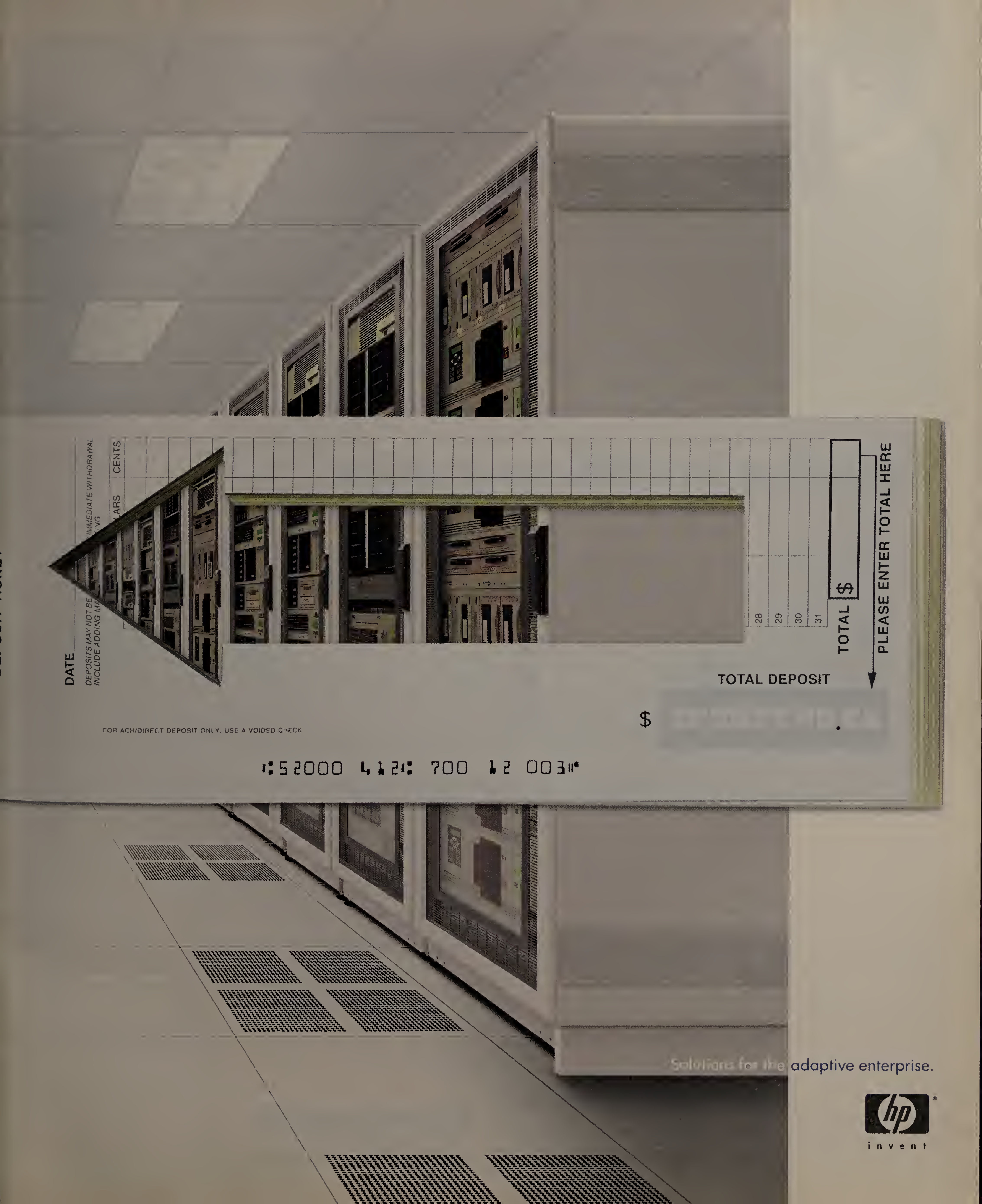
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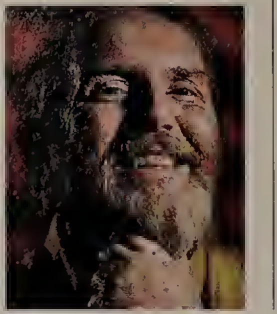

Paper trail won't cure e-voting ills

I still get the occasional e-mail about a column I wrote in February ("Rock the 'Net vote," www.nwfusion.com, DocFinder: 3526) about electronic voting devices, equating my support of electronic voting with a desire to see the upcoming November elections subverted in some way.

This seems to reflect a trend I've noticed in the mass media and among those whom I thought were reasoned advocates of technological advance. In particular, there's the issue of the "paper trail."

Many want electronic voting machines to spit out a paper receipt to be placed in a sealed box to be used in case a recount is needed. Fine so far, but the issue has taken on cause celebré status and I fear many believe that not only is a paper receipt necessary to ensure proper voting but also that it's sufficient to do so. And that's the real problem with this publicity.

There's nothing magical about a paper receipt. To take just one scenario, suppose someone has hacked a voting terminal so that it shows, on screen, a vote for Candidate A (the one you wished to vote for) while recording it as a vote for Candidate B. How hard would it be for the hacker to also ensure that the paper receipt also indicated the vote was for Candidate A so that you felt sure your vote was counted exactly as you cast it? It's childishly simple, as most of us know.

Aha, you say, but when the people talked among themselves and realized that the vote totals were at odds with their recollection of how they voted, a recount would be instituted and the receipts would show the proper votes! Well, yeah, provided the hackers were totally unsophisticated about how elections work. In a close presidential election in the U.S., the switch of little more than a handful of votes can change the outcome because of the method we use. It's not necessary for the winning candidate to acquire a majority of all votes cast, just a majority in enough states to ensure that a majority of the electoral votes go to that candidate. It's generally conceded, for example, that had a few hundred votes in very particular precincts been changed in the 1960 election, Richard Nixon and not John Kennedy would have been the 35th president of the U.S.

Paper receipts are fine, but they won't guarantee accuracy of the vote count.

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley.

Tip of the Week

Last time out I took Novell to task over its free offer of Linux tools. Some thought I was too harsh. For more on this issue, see last week's **Focus on NetWare** newsletter (DocFinder: 3527), which casts new light on the situation.

Swan dives into WAN compression

■ **BY TIM GREENE**

Swan Labs thinks making WAN links more responsive is such a hot idea that it bought the WAN-acceleration line of ITWorx.

Called NetCelera, the ITWorx products optimize WAN links by searching traffic streams for repeating patterns and replacing them with shorter sequences to cut traffic. Rather than perform this compression at the network layer, NetCelera does so at the session layer, which lets the gear recognize application flows rather than just streams of bits.

NetCelera boxes are deployed in pairs at both ends of WAN connections, where they examine traffic as it leaves a LAN and look for patterns.

The equipment competes against other gear that also attempts to reduce WAN traffic and improve performance across WAN links but that may use different mechanisms and compression algorithms to do so. These competitors include Expand, Peribit, Packeteer, Riverbed and NetScaler.

Swan CEO Andrew Foss says that next month the company will release new software for its appliances to boost compression, make more efficient use of TCP, support QoS and provide central management of NetCelera devices. Swan is the third company Foss has created. He founded Network Translation, makers of the PIX-firewall, which Cisco acquired in 1995. In 1999, he formed Caw Networks, which Spirent Communications acquired in 2002.

The challenge Swan faces is that the best market for this type of equipment is large businesses with international locations, says Peter Firstbrook, senior research analyst with Meta Group. Cramming more traffic onto expensive international lines provides immediate payback that attracts businesses. They avoid having to buy more bandwidth and get better application performance, he says.

Swan was formed in January and bought the NetCelera line this spring for an undisclosed amount of stock. It might gain some credibility from recent $15 million in funding from Norwest Venture Partners and Doll Capital Management. The company was founded with money from individuals and Benhamou Global Ventures. Eric Benhamou, former chairman of 3Com, serves as chairman of Swan.

Benhamou acknowledges there are other vendors selling this type of gear, but says that breaking the former ITWorx technology out into a separate company with adequate funding will make the NetCelera products more attractive to customers. ■

10G

continued from page 19

works, Extreme Networks, Force 10 Networks and Foundry offer such a blade for their respective switch chassis. "That technology has allowed vendors to lower the per-port price below $10,000," he says.

Price reductions in 10G Ethernet gear have not been limited to switches. Prices also are dropping for 10G server network interface cards (NIC). While Intel debuted its 10G Ethernet NIC in March, priced at about $8,000, vendors such as S2IO and Chelsio Communications now offer 10G NICs as low as $2,000.

Another potentially price-lowering technology just around the corner is 10GBase-T. This will let 10G Ethernet run over Category 6 cabling up to 330 feet. Although this standard is not expected to be approved until 2006, vendors already have announced products or have products in development. Solarflare, a maker of transceiver components for Ethernet switch vendors, says it has a chip that can run 10G Ethernet over a Category 5e cable up to 330 feet (no release date has been set). Also anticipating 10G over unshielded twisted pair (UTP) cabling is Krone, which makes structured cabling systems. Krone offers a Category 6 cabling product the company says will be compatible with 10GBase-T. Switch vendors such as Cisco and Foundry are more mum on 10GBase-T developments.

"It's still a ways out there," USC-ISI's Nelson says of 10G over copper. "As with any kind of Ethernet technology that moves from fiber to copper, distance limitations are a concern. But it does give the potential for lower cost on the interface side."

Analysts say users who held off on first-generation 10G gear made the right move.

Core LAN switches installed in businesses more than 2 years old might not handle full 10G Ethernet because the chassis were limited to about 8G bit/sec of bandwidth between slots and the switch backplane. Synergy's Johnson says most major switch vendors have introduced next-generation switch platforms over the past 18 months that let users fully use 10G Ethernet.

"It really paid to wait and get the non-blocking backplane, which you really need for it to work well," Johnson says.

But while prices are falling, 10G Ethernet still accounts for only about 1% of the Ethernet switch market in terms of port shipments so far in 2004.

"10 Gigabit will look like a good investment a few years from now," Johnson says. ■

■ **More about 10G. PAGES 37, 47**

Redline

continued from page 19

says Erik Giesa, vice president of product management for F5.

The architecture lets users apply security polices, rate limiting and other policies to specific application flows, or aspects of Web transactions, F5 says.

"F5 is trying to push a little but up into the infrastructure stack," Firstbrook says. "Before, load balancing decisions were made by network engineers." But the capabilities in the new TM/OS now bring F5 closer to the application development side of the house in a corporation, he adds.

F5 also is announcing three new Big-IP Traffic Manager switches, which range from four to 16 Gigabit Ethernet ports and offer different levels of CPU and memory capacity. F5 says its TM/OS software also will work on current Big-IP switches. F5's Big-IP application switches range from $17,000 to $35,000, and are available now.

Meanwhile, Redline — a newcomer to the data center appliance market compared with 9-year-old F5 — also is launching a new version of its data center appliance software. Redline Rios 4.0 is software for the vendor's EIX appliance line, and offers what the vendor calls its 3G Caching feature.

Redline's EIX appliances are deployed in front of corporate or Web data centers and offer compression, Secure Sockets Layer acceleration, server load balancing and denial-of-service attack prevention. The 3G Caching feature will let customers cache Web site data and application data such as Web-enabled SAP or Oracle applications, which usually can't be delivered through standard Web-caching technology.

Caching this type of content on a Web site or application server offloads processor burden to the EIX box and makes application servers more available to end users, Redline says.

The Redline 4.0 Rios operating system with 3G Cache starts at $5,000. ■

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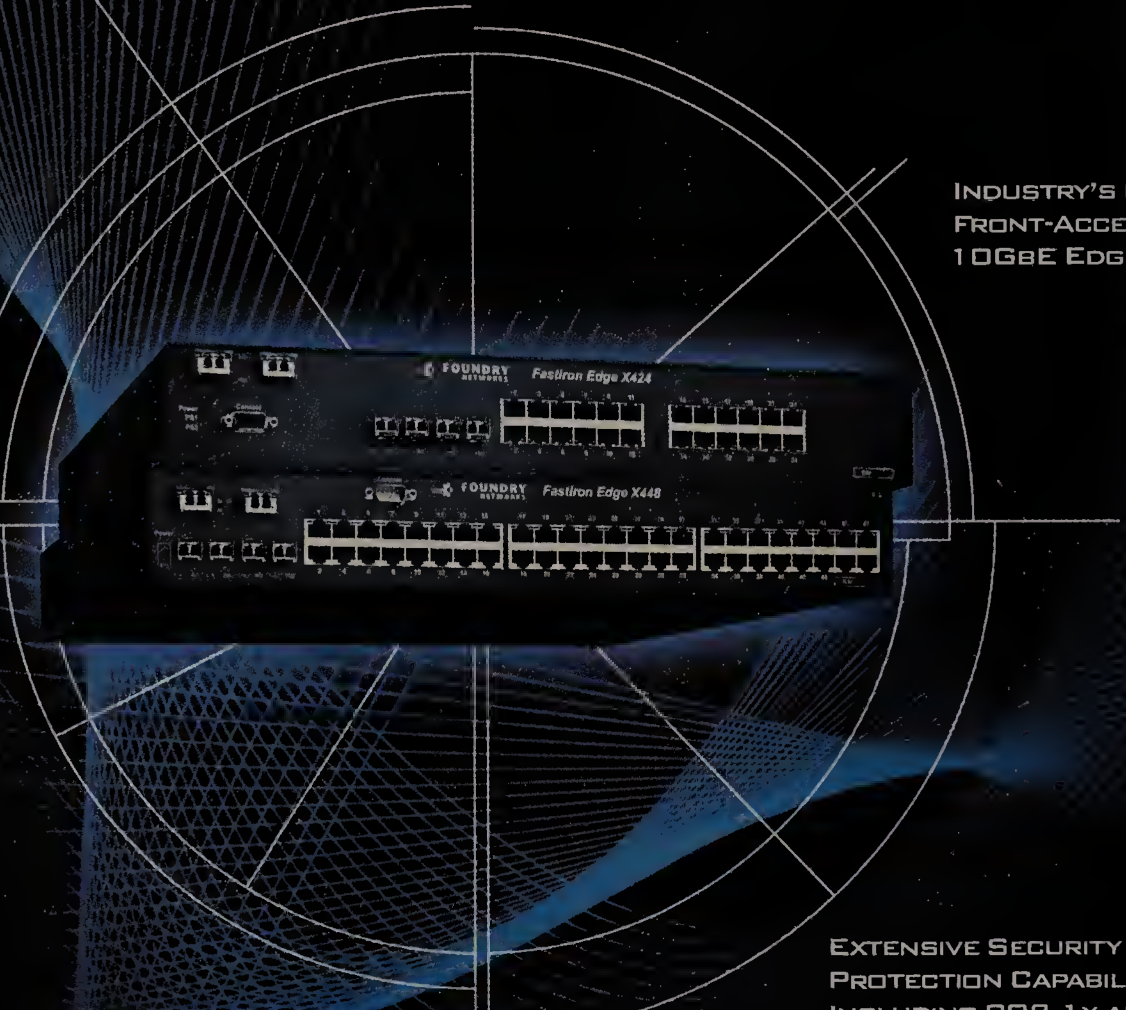

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Enterprise Applications

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InSite: Lessons from leading users

Research center plugs physical security into its network

■ BY ELLEN MESSMER

Keeping its huge data center humming is vital at NASA Ames Research Center, where 4,000 scientists are working on aeronautics and biotechnology projects. When a new custom-built air conditioning system couldn't keep the research outfit's network equipment at the right temperature, it was the IT department's equivalent of a space mission gone wrong.

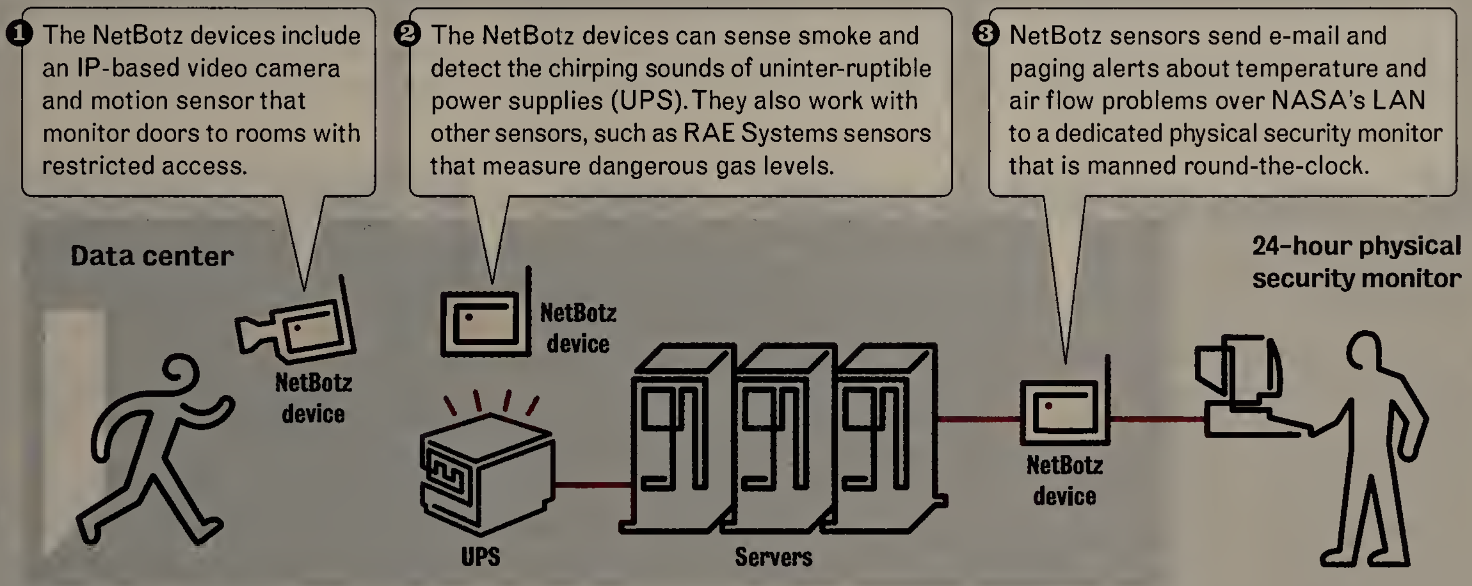
"It failed miserably," says George Alger, assistant division chief of the applied information technologies division and IT services manager. He worried that the A/C fluctuations threatened to disrupt or even damage the 50 racks of servers and switches housed in the Moffett Field, Calif., data center.

"The air conditioning should have maintained 68 degrees to 70 degrees in

See NASA, page 26

NASA's big brother

NASA's Ames Research Center uses sensor devices from NetBotz to help control everything from air conditioning fluctuations to physical security.



❶ The NetBotz devices include an IP-based video camera and motion sensor that monitor doors to rooms with restricted access.

❷ The NetBotz devices can sense smoke and detect the chirping sounds of uninter-ruptible power supplies (UPS). They also work with other sensors, such as RAE Systems sensors that measure dangerous gas levels.

❸ NetBotz sensors send e-mail and paging alerts about temperature and air flow problems over NASA's LAN to a dedicated physical security monitor that is manned round-the-clock.

Celestix improves all-in-one security packages

■ BY JOHN FONTANA

Celestix Networks this week is introducing a security appliance built on Microsoft's Internet Security and Acceleration Server 2004 that is designed to give users firewall, VPN and Web caching capabilities in one box.

The company will introduce three versions of its Multifunction Security Appliance (MSA) — the 2000, 4000 and 5000. The appliances are tailored for small, midsize and large businesses.

Microsoft released the Standard Edition of Internet Security and Acceleration Server (ISA) 2004 earlier this year. The ISA Server promises improved network security and performance by delivering better application security, simplified management, tighter integration and faster caching, Microsoft says. The ISA Server is designed to help users protect Microsoft applications such as the Exchange e-mail server, Internet Information Services Web server and SharePoint collaboration tools.

Several vendors are developing hardware appliances with the ISA 2004 at their core, including Network Engines, Pyramid Computer, RimApp Technologies and Wortmann AG. HP already has released the ProLiant DL320 Firewall/VPN/Cache server appliance, which features the ISA software.

"We think the security appliance market is an eventual trend, but it will develop in fits and starts," says Earl Perkins, an analyst with Meta Group. That is the case, Perkins says, because users still have not decided just what security functions they want to commit to an appliance.

With the 2004 version of the ISA, Microsoft added new application-layer filtering and firewall capabilities, multiple-network configurations and real-time monitoring of log entries to answer critics who said the firewall was not ready for prime time. The ISA 2004 also is integrated with Active Directory so users can apply group- and user-level controls to firewall policy and VPN authentication.

"Arguably [an appliance vendor] could ship a more secure and tightly configured implementation than if you installed it out-of-the-box and deployed it on your own server," says Peter Pawlak, an analyst with independent research firm Directions on Microsoft. "But I think these appliances are not as much for large corporations as they are for smaller companies."

Celestix is taking advantage of the improvements and adding some of its own to MSA, such as TCP/IP tweaks to protect against denial-of-service attacks and a Web-based interface.

MSA2000 features a Pentium 4 Celeron processor and has two auto-sensing 10/100/1000 and two 10/100 Ethernet ports. The MSA4000 has the same processor as the 2000 with two auto-sensing 10/100/1000 and six 10/100 Ethernet ports.

The MSA5000 comes with a Xeon processor and eight auto-sensing Gigabit Ethernet ports.

The 2000 costs $3,500; the 4000, $6,000; and the 5000, $10,000. ■

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Short Takes

■ The **Organization for the Advancement of Structured Information Standards** this week announced it would take over the development of the Data Center Markup Language Framework Specification 1.0. The XML-based specification will provide an inventory of data center elements, describe how those pieces interoperate and define the various policies that bind them together.

■ E-mail security company **FrontBridge** last week bought **MessageRite,** a maker of technology for archiving e-mail and instant messages. The purchase, for an undisclosed amount of cash and stock, adds MessageRite's technology for storing electronic messages and evaluating regulatory compliance to FrontBridge's portfolio of e-mail services.

'NET INSIDER
Scott Bradner

The Internet is not a new telephone

FCC Chairman Michael Powell seems to have found that the thin air in the mountains of Colorado can encourage clarity — in any case he was quite clear about a number of issues when interviewed at the recent Aspen Summit, The Future of the Internet.

It's a shame this just made some of his inconsistent thinking more evident.

The meeting was organized by The Progress & Freedom Foundation (www.pff.org), which describes itself on its Web page as "a market-oriented think tank that studies the digital revolution and its implications for public policy." I'm far from sure what a "market-oriented think tank" might be, but it seems clear from the Web page that the group never met a regulation it liked — an interesting group to host the chairman of one of the most entrenched of U.S. government regulatory bodies.

Powell was interviewed on the first day of the summit. (A conference agenda with links to streaming video of the talks can be found at www.nwfusion.com, DocFinder: 3525.) He said a bunch of things that a market-oriented crowd would applaud and that sounded a bit out of place coming from the chair of the FCC, with its three-quarters of a century of assuming that regulations will cure all ills.

Powell said that the FCC was changing. He said he took over "an agency that principally looks backward and tried to inculcate it with a culture that looks forward." My observation is that the FCC still feels rather more comfortable in looking at past regulatory glory than permitting the future.

Powell said that a "real question facing the country is: 'Is the Internet going to common carriage or not?'" He defined common carriage as "government intervention in the prices, terms and conditions under which service is offered." Later he said that the "seminal question is: 'Do we convert the Internet into a big black telephone only because we are too lazy or not intellectually creative enough to do something other than just export what we are used to?'"

Powell said he would like the basic regulatory assumption to be reversed — instead of someone convincing the regulators not to regulate (because that almost never sticks). He asked: "Why shouldn't the government be the one with the burden of proof [to regulate]?" Why shouldn't a clear need for regulation be shown before any regulation can be imposed?

This sounds, at least to me, like good stuff, and it seems like Powell was not just playing to the crowd. He talks this way and acts this way quite often, but he has some trouble translating this philosophy into action. Far too often he seems to act on principle rather than on the real world. This is especially true when it comes to regulations about people trying to compete with incumbent phone companies. His proposals ignore the last century of government-enforced rules requiring citizens to pay many times over to build a ubiquitous telecom infrastructure. He seems to think that it would be easy for other companies to overcome that head start. Sometimes by looking back you can figure out the present is not simple.

Powell said that "the Internet is something different — it's not a new telephone." True enough, but we cannot pretend that there are no phones or any phone legacy as we set the stage for the future.

Disclaimer: Harvard has a hard time separating legacy from required, though is trying to do so heading into the future. But the above complaint is mine.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.

BMC cooks up batch mgmt. tools

■ **BY DENISE DUBIE**

BMC Software this week is set to unveil software that can alert IT managers when batch job failures or performance decreases will affect critical business services.

BMC's Batch Impact Manager (BIM) is add-on software to the vendor's Control-M job scheduling and batch processing management software. BIM uses data Control-M collects to track the performance of scheduled jobs and send alerts when a slowdown in batch processing could affect a business service, such as check processing, or order e-mail notifications.

Batch business

Gartner estimates that through 2005 more than

50%

of all critical business transactions still will be completed via batch jobs rather than real-time processing.

With batch processing, a group of similar requests is stored and then executed at one time, without intervention from a user.

Control-M uses a combination of server software and distributed agents to collect data from managed systems that perform jobs such as check processing or data warehousing. Customers can use Control-M to define jobs, configure the software to automatically start jobs, and monitor their progress and completion. BIM is installed on the same dedicated Unix, Windows or Linux server as Control-M, and customers can access BIM through a Web interface.

Customers can define in BIM their most critical business services and set performance thresholds to send alerts when the process isn't meeting its deadline. Using data stored in Control-M and collected via its agents, BIM software builds a dependency map, or model of the paths jobs must follow, of all jobs that need to be on schedule to ensure the pre-defined business service is completed on time.

For example, if the batch processing for data warehousing needs to be completed by 7 a.m., an IT manager could configure the software to alert when the process misses one scheduled job at 2 a.m. A problem even five hours earlier could affect the service because the jobs are performed in a series that needs to be completed in order and in a certain timeframe.

At Cambridge Integrated Services Group, a worker's compensation and liability insurance provider in Columbus, Ohio, check processing is critical. Control-M is installed on five servers monitoring 53 systems, with 3,200 defined batch-processing jobs that use nine paths. Product Control Coordinator Laurie Kenley says the group's check-processing business service requires completion of 120 jobs.

"It's essential that our check processing to vendors is done by 6 a.m. every day, and [BIM] alerts us when we might miss the deadline," Kenley says.

Control-M competes with similar offerings from the likes of Computer Associates and IBM, but BMC executives say the capabilities included in BIM that let customers link batch processing performance to business services hasn't been included in competitive products.

BIM is available this week, and pricing starts at $4,500. ■

Site: Lessons from Leading Users

NASA

continued from page 25

the room, but it didn't," Alger says about the custom-built system, which cost about $800,000.

NASA Ames became aware of the high and low temperature spikes because two physical-security sensors from NetBotz continuously monitor the data center's environment.

Positioned on the wall, the NetBotz sensors send e-mail and paging alerts about problems discovered in temperature, air flow and other conditions over NASA's LAN to a monitor dedicated to physical security that is manned 24-7.

The NetBotz findings convinced the IT department it had to rip out the air conditioning system and start over this year.

"We scrubbed the entire design," Alger says. NASA Ames accepts the blame for the data center's AC problem, which it corrected through closer coordination between the IT department and various designers and contractors.

The boxes can detect other data center threats, such as smoke, and can hear the sounds of uninterruptible power supplies (UPS) calling for attention.

NASA Ames uses products from other vendors to monitor other factors, such as the presence of specific gaseous substances like hydrogen, which can be given off by some older UPS batteries. "Hydrogen concentrations coming from batteries can be explosive," Alger says.

NASA Ames uses Arrgh Manufacturing's hydrogen-gas sensor, which can be plugged into the NetBotz box.

Although NetBotz can't accept all physical monitoring gear, it does work with RAE Systems sensors that measure dangerous gases as well as Liebert surge-protection and other equipment. Monitoring information and alerts — even standard SNMP traffic from routers and switches — can be sent to the NetBotz monitor.

NetBotz also can work with many dry contact sensors, which can detect glass breaking and water or vibrations.

This fall, NetBotz intends to add support for the IEEE standard 0-5v and 4-20MA sensor interfaces typically used in industrial and process automation equipment in water-treatment and chemical plants, and nuclear facilities to give information about flow rates and tank levels.

Unwelcome visitors

NetBotz also helps watch for intruders who try to slip into restricted high-security areas.

The NetBotz devices include an IP-based video camera and a motion sensor that continuously provides surveillance. NASA Ames is deploying about 20 NetBotz appliances for this purpose around doors to rooms that remain off-limits to unauthorized personnel. Altogether, NASA Ames has spent about $35,000 on its NetBotz deployment.

"We have restricted areas, and we've found contractors in these areas where they are not supposed to be," Alger says. Although these rooms typically have card-key access, intruders can gain entry by following someone who just gained entry to the room.

NASA Ames provides security personnel with information about what individuals should be in certain locations at Moffett Field at particular times so if the NetBotz video camera shows suspicious activity, a guard can investigate. ■

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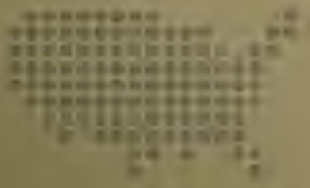

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Special Focus

APPLICATIONS: Presence technology.

Presence applications poised for takeoff

■ **BY JOHN FONTANA**

There is a killer on the loose under the covers of instant messaging, and no, it isn't malicious; it's a killer application that has the potential to revolutionize the way companies collaborate and communicate.

The killer app is presence. IM users see evidence of it every day in their buddy lists as a little icon that shows someone is online. But down the road, experts say, presence will separate itself from IM and evolve into a network service tapped by applications and corporate communication services, including telephony.

"In the future, presence will be the underlying [network] capability, and IM will just be one of the apps that takes advantage of that," says Melanie Turek, an analyst with Nemertes Research. "Presence is the killer app."

Why? Because presence ultimately is seen as a real-time communications, messaging and routing infrastructure that not only supports collaborative applications for user-to-user interaction, but also supports communication between applications and users. It also supports application-to-application integration, whereby presence infrastructure is used to announce which applications are up, what their functions are and what types of protocols they accept.

"In the end, presence is metadata," says Mike Gotta, an analyst with Meta Group. "It can contain information about someone or something."

But before presence explodes on the scene, it faces myriad challenges, including corporate buy-in to its potential and power, management tools to control it and, most importantly, the development of interoperability standards, the same liberator that unshackled e-mail nearly a decade ago.

Early adopters

The challenges are many, but early adopters already see the potential in doing the heavy lifting.

"In the next six to eight months we want to have something in place for a one-stop shop to get the right information to the right people at the right time," says Heidi Rebottaro, project manager for application development for Nektar Therapeutics in San Carlos, Calif. The company develops methods for administering drugs such as an inhalation technology used with a new dry form of insulin.

Rebottaro is using IBM Lotus Instant Messaging and Web Conferencing server, which supports presence capabilities within Nektar's portal of collaborative applications and online training courses. "We use presence to find instructors, authors of documents and in chat rooms for team members," Rebottaro says.

But she has thoughts of a presence-based publish-and-subscribe channel that would let applications instantly send new information to end users or to support workflow applications that could seek out available managers to approve purchase orders.

"The infrastructure for presence and awareness is in place," Rebottaro says. "We just need to add that top layer of applications. We just need to find the time to do it."

Vendors are finding time for presence, and its inclusion in popular applications could light a fire.

Integration lesson

A well-designed presence system should include a specific set of features and functions when integrated with collaborative or communication applications, according to consulting firm Collaborative Strategies.

- Should integrate with corporate directories.
- Can send pop-up messages to a group or an entire organization.
- Can limit or grant access and to change status.
- Can extend system with custom status designators.
- Controls to disable user right to manually change status.
- Automatic posting of "idle/away" status and "auto reply" messages.
- Should integrate with corporate directories.
- Can detect status of phones (on/off hook) or mobile devices.
- Can detect agents, avatars or aliases.

IBM has integrated presence into Lotus Notes, which has more than 100 million users, and Microsoft has added it to Office, which sits on 90% of corporate desktops, and SharePoint Portal Server using Live Communications Server (LCS) as the back-end infrastructure. Microsoft recently signed a deal with AOL and Yahoo to connect LCS users to public IM networks, a precursor to the connectivity interoperability standards promise.

"It's fair to say that presence is a relatively nascent technology, but we see the concept eventually expanding beyond people to servers and applications," says Ken Bisconti, IBM's vice president of messaging products.

Jabber, Inc., which develops real-time communication server platforms for developing IM and presence-enabled applications, is fashioning its XCP platform into an application server of sorts not only for presence, but also for messaging, routing and XML-application development. In September, it will release a publish-and-subscribe technology called Information Broker for pushing content out to users.

IM Logic's IM Linkage includes a robot, or "bot" feature that can find users, pull them into a Web conference, provide a chat room pre-loaded with key data and dial phone numbers for voice support. Siemens' HiPath OpenScape portal uses presence based on Microsoft's LCS to support conferencing, workflows and other communication to mobile and fixed phones, e-mail and other collaborative applications. WiredRed's e/POP is already the backbone for business communications provider Mitel's Your Assistant service, which marries presence information from PCs with presence from VoIP and traditional phone service.

Monster.com has deployed an integrated information client on some of its desktops with Nortel's Multimedia Communications Server 5100 on the back end, which integrates voice, data and video services.

Presence information lets users change their location, say from home to the office, and have phone calls follow them. Videoconferencing lets users find colleagues online and convene real-time meetings. The software lets users specify who can see them online and who can't.

Challenges

One of the biggest challenges to adoption has been cultural, according to Aaron Branham, vice president of global operations and networking for Monster.com.

"As presence follows you it makes you available or visible wherever you are," he says. "A lot of people stopped using it after a while."

It's part of a security challenge called presence management.

"Presence has to tie into identity management to cascade the information to applications and to broker and syndicate presence data for use outside the organization," Meta's Gotta says.

Another hot button is standards. Today, Session Initiation Protocol (SIP) is an IETF-approved standard accepted by Microsoft, IBM, Cisco and about 100 telephony vendors for its flexibility in setting up sessions, of which IM is just one example. But debate rages over Extensible Messaging and Presence Protocol (XMPP), another IETF standard that draws support from many open source advocates, and SIP for Instant Messaging and Presence Leveraging Extensions (SIMPLE), which is working its way through the IETF but enjoys the same backing as SIP.

"We are very much committed to supporting SIP/SIMPLE, and we will not end up supporting XMPP natively. But that does not close the door on gateways, although one is not planned now," says Dennis Karlinsky, lead product manager for Microsoft's LCS.

XMPP backers, including Bell South, which uses it within a real-time digital call-center application, say the XML-based data-transport protocol is more flexible and extensible, and supports features for IM and presence that SIMPLE lacks, such as group chat and contact lists.

"Presence, message routing, authentication. The fact that XMPP is XML means you can put in [those kinds of] extensions," says Joe Hildebrand, chief architect for Jabber, Inc., who predicts real-time platforms will become much like application server platforms of today.

The challenge to that, of course, is user acceptance, which has been growing steadily.

A recent Osterman Research study shows 44% of companies use IM with business applications, up from 21% just three years ago. Furthermore, 34% of users have standardized on an internally run IM platform, up from 24% just two years ago.

Some say the numbers suggest that presence is well on its way to being that killer app.

"Just like in the late '90s when the No.1 thing on IT agendas was to Web-enable applications, I think the story of the next decade will be adding presence to applications," says Francis deSouza, president of IMLogic. "Every application can be made smarter and more efficient with presence." ■

APPLICATION SECURITY.

HERE'S HOW TO KNOW WHEN YOU REALLY HAVE IT.

As every aspect of business migrates to the Web, back-end systems once sheltered are now exposed. Browser-based applications pass through the entire security perimeter, giving users unprecedented access. Little wonder that the majority of attacks today target the application directly.

What can you do? How will you know the right solution when you see it?

When it can recognize two common hacker techniques that pass straight through most security solutions. In the first case, hackers enter as one user, then tamper with the Web page to change their identity or escalate privileges. In the second, they change or bookmark the URL of a Web application to enter restricted areas. Because both involve properly formatted, valid looking requests, they can only be blocked by a solution which understands the application context in which the requests are made.

When it knows exactly what your application's traffic should look like, and blocks everything else. The ideal protection would be based on the application's specific logic, not generic traffic patterns. It would have a comprehensive understanding of how the user interacts with the application, and deny all requests not known to be legal.

When the solution doesn't rely on attack signatures or other patterns of abnormal user behavior. Incorporating Intrusion Prevention Systems (IPS) into traditional firewalls still leaves systems exposed to threats cloaked as normal traffic. Worse, it leaves them blind to dangerous targeted attacks from legitimate users who tamper with inputs to gain access to restricted information.

When it understands the application. The solution must operate at the application layer, not the network layer. It must be able to look at entire requests–not just at packets on the wire–to tell a good request from a bad one. That leaves out network security products such as firewalls and IPS.

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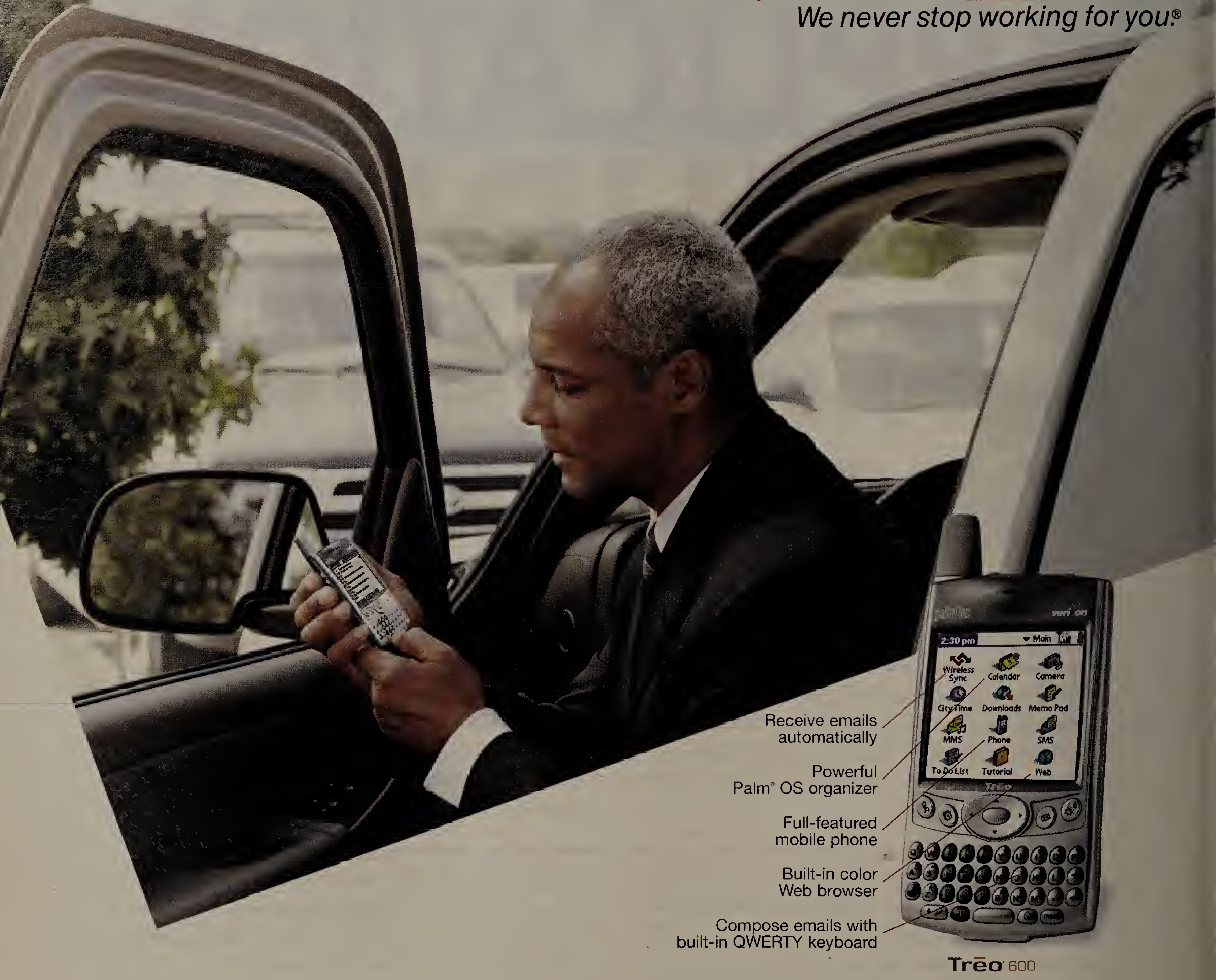
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Infonet VPN service to exploit the 'Net

MPLS-based offering complements VPN service based on Infonet's private IP net.

■ **BY CAROLYN DUFFY MARSAN**

Infonet Services next week will announce a low-cost, managed VPN service that uses the popular Multi-protocol Label Switching protocol and rides over the Internet.

The new IP VPN Internet service complements Infonet's IP VPN Secure service, an MPLS-based offering carried over Infonet's private IP network.

Infonet says it is the first ISP to market with MPLS VPN services available globally across public and private IP networks.

AT&T in May announced a similar, Internet-based IP VPN service available in the U.S. only.

Infonet's strategy is to let customers take a hybrid approach when building out their converged network backbones.

"We believe this is a worldwide first to offer an Internet-based MPLS service using Infonet-owned and -operated Internet infrastructure," says Jean-Noel Moneton, vice president of IP Services for Infonet. "We are offering our customers a hybrid of public and private IP… [for] the best mix of performance and price point."

Infonet says it has signed up four corporate customers for the new service, including Wartsila Diesel, a Finnish marine diesel engine manufacturer that uses Infonet's private MPLS-based VPN services.

"Wartsila Diesel is a fairly large customer of our IP VPN Secure service," says Gary James, senior product manager for Internet Services at Infonet. "They've been leveraging our private IP network throughout the world, but they had a number of sites that couldn't justify the price of a private backbone. So they've extended their network in Europe using IP VPN Internet."

Infonet is targeting IP VPN Internet at multinationals like Wartsila Diesel with smaller branch offices that need less-expensive VPN links. Another target market is companies that want to build their own IP VPNs but don't want the hassle and expense of managing IPSec tunnels or digital certificates for encrypting traffic.

"About 75% of IP VPN deployments are what we'd categorize as roll-your-own implementations, where an enterprise buys IP VPN equipment from somebody like Cisco or Nortel and Internet access from AT&T or some other ISP and uses IPSec tunnels for encryption," says David Parks, senior analyst for telecom strategies with The Yankee Group. "This is a huge market opportunity for the carriers that they haven't been able to capture yet."

Parks estimates that the North American IP VPN market will top $2.7 billion this year, and increase to $9.5 billion by 2008. He expects other ISPs to join Infonet and AT&T in offering MPLS-based VPN services over the Internet.

"Infonet has a little bit of a first-mover advantage, along with AT&T," Parks says.

Infonet officials estimate that companies will save about 30% for IP VPN Internet services when compared with IP VPN Secure services.

"Having an MPLS backbone over the public Internet allows clients to have the security of a private network, with closed user groups and addresses that are not advertised out to the Internet. But they can still leverage the price points of the Internet," James says. "Customers can choose what service they want on a site-by-site basis."

Customers with performance-sensitive

See Infonet, page 34

Take your pick

Infonet soon will offer three different IP VPN offerings.

Name of service	❶ IP VPN Secure	❷ IP VPN Internet*	❸ IP VPN Off-net
Type of network	Private IP	Infonet Internet	Open Internet
VPN implementation	MPLS/BGP	MPLS/BGP	IPSec/PKI
QoS	Excellent	Very high	Unpredictable
Security	Very high	High	Vulnerable
SLAs	End-to-end	End-to-end	None
Reporting	Web-based	Web-based	None
Topology	Any-to-any	Any-to-any	Point-to-point
Classes of service	5	1	None

*New service to be announced Sept. 9.

Start-up offers VoIP users pick of phones

■ **BY TIM GREENE**

IPtimize is moving beyond its data services roots with a managed VoIP offering that gives small businesses a choice of using IP phones, softphones or their existing analog handsets.

Called Voice Pilot, the service is designed to let customers start on a small scale before committing to it, says Jeff Veres, COO of IPtimize, a privately funded start-up whose management team consists of telecom industry veterans from carriers such as Cable & Wireless and Qwest.

With three options to choose from, users of IPtimize's new service can turn their PCs into phones by adding software and headsets, use Cisco or Polycom IP phones, or hook their current phones into the IP network via a terminal adapter. The company says it is considering other IP phone options that cost less.

Customers with broadband Internet connections from a different provider can buy the new service. The IPtimize voice service would be supported off an Ethernet switch connected to a WAN router.

The company provides a call attendant console for receiving and transferring calls to other extensions. The equipment supports three- and four-digit dialing and other PBX features that are extendable to phones in remote offices. So a home-officer worker with broadband could connect an IP phone and become another extension on the business phone network, Veres says.

IPtimize is making its initial push for sales in Denver, where it is based, but Veres says the company will expand its efforts across the country.

Business customers pay $50 per month per user for the managed service, and that comes with unlimited local and long-distance calling in the U.S.

The service is similar to IP telephony offerings from Vonage in that it lets customers use their current Internet connections to tie into the voice carrier's network. A major difference is that IPtimize resells its service from wholesaler New Global Telecom. That means if there is trouble with the service, New Global Telecom will deal with it even though the customer has signed a contract with IPtimize. ■

Short Takes

■ **AT&T** inked a $3 million deal with **Vector Security** last week for a 22-site network-based IP VPN. AT&T displaces MCI as the primary carrier for the Pittsburgh company. Vector had a frame relay WAN but now has opted for an IP VPN service that can support VoIP. Vector's IP VPN will let the company consolidate its voice, video and data traffic, but the company is proceeding cautiously. It will begin testing AT&T's VoIP services at "a couple of locations" in the next 30 to 45 days to determine if it is a viable alternative to traditional voice services. AT&T also is providing long-distance and toll-free voice services.

■ The French government will sell a 9.6% stake in **France Télécom,** taking its holding below 5%, the Ministry of the Economy, Finance and Industry said last week. Thanks to its return to financial stability since the end of 2002, and the reintegration of its mobile telephony and Internet access subsidiaries, the Paris telecom company is ready to go it alone, the ministry said in a statement. By reducing its stake, the government says it will give the company the freedom to succeed in a competitive market.

INSERT SAVINGS.

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EYE ON THE CARRIERS

Johna Till Johnson

Distribution online: Dawn of a new era

Every now and then you get a glimmer of good news. Today's is regarding online information distribution: I'm seeing the first signs that the music industry is finally getting its collective head around the idea that new technologies require new business models.

Some history: Readers of this column will recall that I strongly oppose the Recording Industry Association of America's (RIAA) misguided efforts to protect copyrights by forcing telcos to divulge the identity of music downloaders. In the year since my first column on the topic, the RIAA has won some high-profile legal battles against music downloaders — yet music downloads have reach an all-time high.

To avoid the inevitable flame-mail, let me be clear. I support the right to intellectual property protection. I have to. As a coder, an analyst and someone whose friends include programmers, artists and musicians, I'd have no income and no social life in a world without intellectual property protection.

What I don't support is giant corporations using tedious, expensive legal battles in an ultimately futile attempt to hold back the spread of technology that can, in the long run, add great value to them and to their customers (that also explains my distaste for the RBOCs, but that's another column). In short: Suing your customers is stupid. Suing your customers when the technology exists to offer them enhanced services is beyond stupid — it's brain-dead.

So what's the good news? First, that music companies finally are getting the message that today's content-delivery systems aren't working. Advertiser-supported content is slowly but surely losing ground to pay-to-listen delivery models. Clear Channel Communications, the No. 1 radio station owner in the U.S., recently announced that it's reducing the amount of advertising per hour on its stations (from approximately 24 minutes to approximately 12).

That's because nobody's listening any more. A Canadian study found a drop of 25% in radio-listening time by Canadian teens (said one, "[On the radio] there are too many commercials . . . with the computer, you can download whatever you want, and you don't have to listen to what you don't want.").

Duh. Has anyone noticed that subscribers to satellite radio stations (XM and Sirius) have doubled since the start of the year? XM now claims more than 2 million subscribers, and Sirius has more than 500,000 — watch for those numbers to grow.

And more to the point, online music services have taken off. Microsoft is said to be planning an online music service to compete with Apple's iTunes as early as this month. Music industry experts predict that as much as one-third of all music will be delivered via the 'Net in a few years, and already are pronouncing the death of CDs.

Bottom line: The inevitable will happen. All the lawsuits in the world can't save the RIAA from online distribution models. With a little bit of luck, other information-distribution industries will follow suit — creating a world in which content creators, consumers and distributors all win.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@[illegible]ertes.com.

Infonet

continued from page 31

applications such as voice or video over IP are likely to stick with Infonet's IP VPN Secure and its five classes of service, company officials say.

"The Internet backbone doesn't support class of service," James says. "With the secure network, we can guarantee specific latency, packet loss and availability by application."

However, companies with locations that require e-mail, file transfer and Web browsing could take advantage of the new IP VPN Internet service with its single class of service.

Infonet officials say IP VPN Internet offers several advantages over do-it-yourself VPNs including the inherent security of MPLS, a fully meshed architecture and the elimination of IPSec tunnels.

"With an MPLS VPN, clients are separated from the public Internet so they're not subject to denial-of-service attacks or hacking," James says. "On top of that, we offer a security suite. . . . Customers can choose from network- or premises-based firewalls and encryption on top of firewalls."

Infonet's new IP VPN Internet is available in all 57 countries where Infonet offers IP VPN Secure services. The new offering is available at speeds up to 155M bit/sec. Infonet's IP VPN Internet integrates with its IP VPN Secure and IP VPN Off-net services.

The cost of Infonet's IP VPN Internet service depends on the number and location of sites and the amount of bandwidth that a company requires. Pricing for a 15-site IP VPN Internet network — with eight sites in Western Europe, four sites in the U.S., one in Mexico, one in Canada and one in Asia — with all sites having T-1 speeds is slightly over $15,000 (or an average of $1,000 per site) per month. ■

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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

10GBase-T brings blazing speed

■ **BY JAN ALEXANDER AND TOM DEBIEC**

As the density of devices in enterprise networks and data centers increases, there is an emerging need for low-cost, 10G bit/sec Ethernet over twisted-pair cabling. A 10GBase-T standard in the works will support 10G Ethernet over new wiring at distances of up to 330 feet and existing wiring at distances of up to 182 feet.

An IEEE task force first met in March to begin hammering out the new 10GBase-T, or 802.3an, standard. The first draft is scheduled to be ready this year, and the group expects to finalize the standard in 2006.

To run multi-gigabit data rates on four-pair copper cabling, sophisticated digital signal processing is used to eliminate the effects of cross-talk between pairs of cable and to remove the effects of signal reflections. But it's difficult to eliminate noise that is external to the cable, such as electromagnetic interference from outside sources or adjacent cables. Cable-to-cable noise, or alien cross-talk, prevents wiring from reliably operating under worst-case 330-foot conditions.

To address this problem, a Telecommunications Industry Association (TIA) subcommittee for cabling specifications is working to provide additional requirements for cabling installations up to 182 feet.

To support distances of 330 feet, as required in the U.S. market, substantial augmentation to the existing cabling specifications are required. This will result in a separate cabling system designed for 10GBase-T. The TIA cabling subcommittee currently is addressing this task.

The subcommittee must develop a new Physical Layer entity (PHY), which interfaces with the existing 10G media access control and Gigabit Media Independent Interface in the IEEE model. The PHY contains the functions that transmit, receive and manage encoded signals that are recovered from cabling systems.

The PHY will be based on pulse amplitude modulation (PAM). Using PAM, information is encoded by a stream of pulses with discrete amplitudes. This is the same modulation technique currently used in 100Base-T and 1000Base-T, but the symbol rates and digital signal processing techniques will be enhanced.

The question is, what type of PAM encoding will be used? There are two proposals on the table, PAM12 and PAM8. PAM12 operates at 825M symbols per second. It has the advantage of using lower baud rate than PAM8, which operates at 1000M symbols per second. Presentation materials show that PAM8 might be able to tolerate 20% more noise than PAM12. Because PAM8 separates sampled signal values into only eight distinct voltage levels, the difference between each level is greater than it would be for PAM12, which makes it easier to determine the level of each sample.

Also being considered is a technique known as Tomlinson-Harashima Precoding (THP), which takes the known signal values and equalizes them before transmission, rather than best-detected values. Low-density parity check, a common coding approach that decreases the signal-to-noise ratio needed to achieve a required bit error rate, works well with THP to reduce the amount of required transmit power.

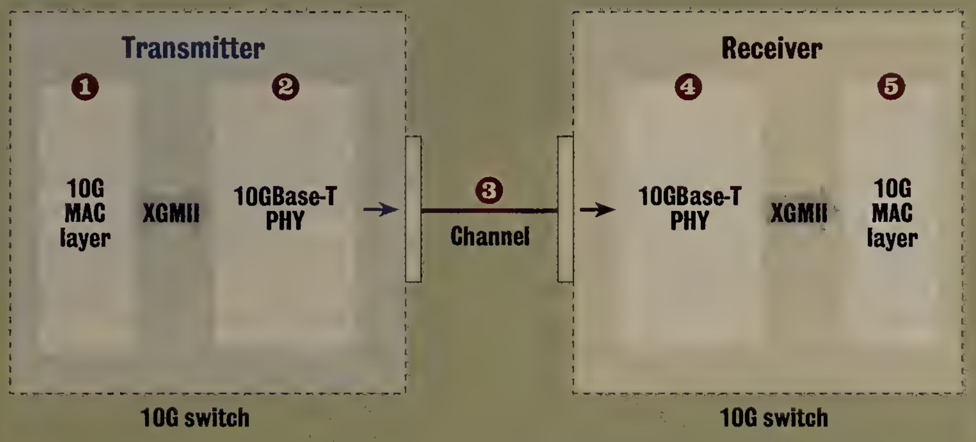
There are many building blocks that make up the 10GBase-T system architecture. The IEEE task group has made a great deal of progress toward its goals and is continuing to flesh out technical proposals that will make 10GBase-T a reality by the summer of 2006.

Alexander is a senior project engineer for Nexans, and Debiec is a technical marketing specialist for Berk-Tek, a Nexans company. They can be reached at jan.alexander@nexans.com and tom.debiec@nexans.com, respectively.

■ **HOW IT WORKS**

10GBase-T

Also known as 802.3an, the proposed standard supports 10G bit/sec Ethernet over unshielded twisted-pair wiring.



① The existing 802.3 10G media access control (MAC) layer and Gigabit Media Independent Interface (XGMII) developed for 10G over fiber are used to deliver packets to the Physical Layer entity (PHY).

② The 10GBase-T PHY encodes data to be sent over the four twisted pairs of the cable.

③ The channel includes the connectors, cable and patch cords connecting the two switches.

④ The receiver equalizes and decodes the signal into data.

⑤ The MAC receives the data from the PHY to be processed as received packets.

Got great ideas

■ *Network World* is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).

Ask Dr. Internet

By Steve Blass

We tried the FormMail modifications you suggested last week (www.nwfusion.com, DocFinder: 3528), and the data file was saved but the comma separated value format didn't work. The data file contains copies of the FormMail e-mails rather than a simple table containing the values. How do we fix it?

The instructions I provided create a text file containing copies of the FormMail messages with a CSV extension rather than a comma separated value table. To extract and save only the submitted form field values to such a table requires parsing the name/value pairs out of the e-mail body and writing the table. The easy fix is to modify the stock FormMail.pl script to add a subroutine that uses the standard Perl CGI module for parameter parsing and writes comma separated data values to the file. To use the CGI module, include the line: use CGI;

To write an actual CSV string to the CSV file, use a statement such as: foreach $p (CGI::param()) { print CSV "$p,"; } Depending on your original form, you might need to perform some validation to ensure that each line contains values from the proper field in each column.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD
INSIDE THE NETWORK MACHINE

Mark Gibbs

Driven to drink by code and coding

We were recently driven to drink trying to get an application to talk XML to the embedded Web server in HomeSeer, the home automation application we discussed some weeks ago.

The application, written using Xcelsius from Infommersion, was supposed to send an XML datastream to HomeSeer server via a POST request. The payload of an HTTP POST request follows the header and looks something like this:

```
POST /test.asp HTTP/1.1
  Host: www.somehost.com
  User-Agent: Mozilla/4.0
  Content-Length: 27
  Content-Type: application/x-www-form-urlencoded


  userid=bob&password=fish
```

The payload is everything that comes after the "Content-Type" line. The format of the POST payload should be one or more "variable=value" pairs separated by ampersands.

Using Active Server Pages (ASP) code, the browser's POST request is stored in a data structure called the "Form collection." But with HomeSeer there's a limited number of access methods to get to this data, so we used the following:

```
mydata = Request.Form(1)
```

From the POST request detailed above, this code would set mydata equal to "bob" (quotes not included). So, here's an XML datastream that we'll send to a Web server:

```
<data>
 <variable name="Some Stuff">
  <row>
   <column>A A A</column>
   <column>B B B</column>
  </row>
  <row>
   <column>D</column>
   <column>E</column>
  </row>
</variable>
</data>
```

This is the format of a two-column, two-row table encoded in XML. When the data is accessed through the Form collection using the ASP code above, the contents of mydata will be:

```
"SomeStuff"><row><column>AAA</column><column>BBB</column>
<column>CCC</column></row><row><column>D</column><column>
E</column><column>F</column></row></variable></data>
```

What happens is the built-in parsing of POST requests by the Web server assumes the character string "<data><variablename" is the name of the variable (demarcated by the "=" that gets thrown away) and that everything else following is the value of that field.

But the XML variable name was "Some Stuff" not "SomeStuff": The white space is AWOL. And not only the white space between the XML tags disappeared but also the white space in the tag's data.

This happened because it is the responsibility of the sender to "URL encode" all characters per RFC 1738, the "Uniform Resource Locators (URL)" specification, before sending them to the server and here, the white space isn't encoded!

In the case of un-encoded white space, the Web server simply ignores it. If other unencoded characters such as ampersands and equals signs are present, they will cause the server to make further assumptions and complicate matters even more.

As it turns out, that was our problem. Consider the following:

```
$&+,/:;=?@ "'<>#%{}|\^~`
```

If this was URL encoded to RFC 1738, the character sequence sent to the server should be:

```
%24&%2B%2C/:;=?@%20%22'%3C%3E#%25%7B%7D%7C%5C%5E%7E%60
```

Xcelsius generated the following:

```
$&amp;+,/:;=?@  &quot;&apos;&lt;&gt;#%{}|\^~`
```

This is not URL encoding, but HTML encoding. And the result of the application POSTing XML data without converting it to the URL encoded format that the Web server expected cost us about 6 hours before we figured out what was going on. It turns out that the cause was not actually Xcelsius. It was Macromedia's implementation of XML POSTing in Flash's Actionscript language. The Xcelsius engine is written in Actionscript so it inherits the snafu.

We found out subsequently that Colin Moock's book on Flash's underlying language, *Actionscript: The Definitive Guide,* says: "The server application receiving the posted XML string must be able to access the raw POST data of the HTTP request directly and should not attempt to parse it as normal name/value pairs.... In ASP raw POST data may be accessed via the Request.BinaryRead method..."

We needed a stiff drink. What can we pour for you at gearhead@gibbs.com?

Cool Tools

Quick takes on high-tech toys

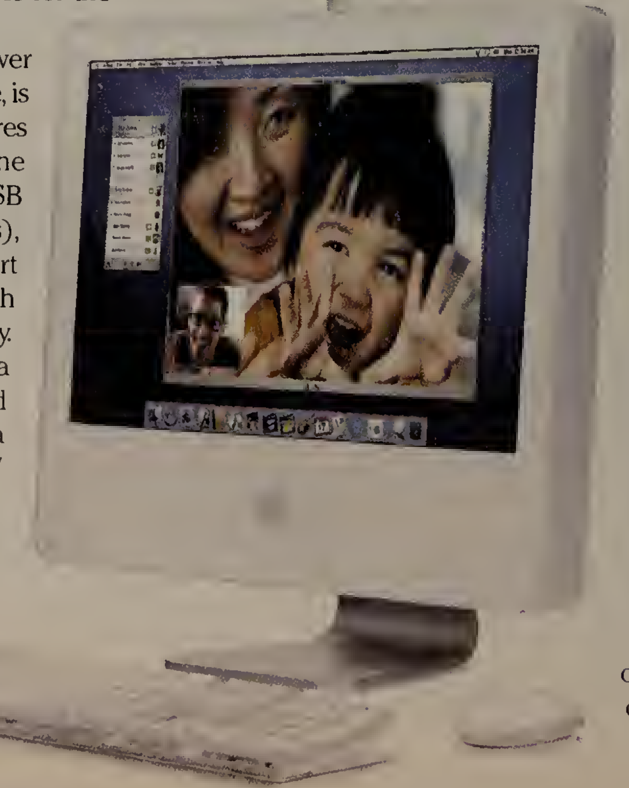
By Keith Shaw

Apple iMac G5 merges computer and display

Apple last week launched the iMac G5, a thin desktop computer that integrates everything into a flat-panel display. The iMac G5 includes a G5 processor (with speeds up to 1.8 GHz), and will come with either a 17- or 20-inch active matrix widescreen LCD. Prices for the computer start at about $1,300.

The entire computer, from the power supply to the slot-load optical drive, is built into the display, which measures 2 inches thick. All the ports are on the rear right side (including five USB ports and two FireWire 400 ports), and include optional AirPort Extreme (802.11g) and Bluetooth wireless modules for connectivity. The 17-inch version comes with a 1.8-GHz PowerPC G5 processor and a SuperDrive for DVD burning, or a 1.6-GHz G5 processor and a CD/DVD combination drive. The 20-inch model also has the 1.8-GHz processor and SuperDrive. Other features of the desktops include double-date-rate memory expandable to 2G bytes, an AGP 8X graphics card and hard drive space of up to 250G bytes. Apple will bundle its suite of digital lifestyle applications, called iLife '04, which includes iTunes, iPhoto, iMovie, iDVD and GarageBand.

The company says the iMac G5 will start shipping worldwide in the next few weeks and will be available from Apple retail stores, re-sellers and its online Apple Store.



The 2-inch-thick iMac G5 holds everything from the power supply to the slot-load optical drive.

Logitech shrinks a Webcam

Logitech has launched a new Webcam, the QuickCam Communicate. The $50 device is scheduled to be available later this month in the U.S.

The QuickCam Communicate comes with a flat-panel clip that is flexible for connecting to flat-panel monitors and notebook computers. It also has a blue light that glows when it's in use and an integrated microphone for recording audio-to-video clips. The Webcam works with several video applications, including MSN Messenger, AOL Instant Messenger and Yahoo Instant Messenger. It comes with a trial version of Logitech's VideoCall for broadband, which synchronizes voice chat and video over a broadband Internet connection.

Wi-Fi is now standard on the SoundBridge network media players.

Roku offers free Wi-Fi for SoundBridge player

Roku has announced it will offer a free Wi-Fi connection as part of its SoundBridge network music player. Wi-Fi connectivity formerly cost an extra $50.

The device streams digital music and Internet radio from any computer to powered speakers or a stereo system. It has a vacuum fluorescent display, and a remote control that lets a user change a song or make other choices without touching the device or his computer. The SoundBridge comes in two models, the M2000 (17 by 2.75 inches, for $500) or the M1000 (10 by 2.37 inches, for $250). It can play digital music in many formats, including Apple's AAC format, which it uses in its iTunes software. This means users who have iTunes can add SoundBridge to their home networks and play songs, including those on the iTunes playlists, without installing extra software. But songs purchased from the Apple Music Store, which are encrypted, cannot be played on the SoundBridge, the company says.

Users who bought SoundBridge before the announcement can receive a Roku-tested Wi-Fi card, take $100 off the purchase of another SoundBridge or the HD1000 high-definition media player, or get a $50 refund.

For more information, go to www.rokulabs.com.

Shaw can be reached at kshaw@nww.com.

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ON TECHNOLOGY

John Dix

Next up at Nortel: The new CEO

Soon after we met with Nortel President and CEO Frank Dunn last February, he and a number of his lieutenants were fired for accounting shenanigans. The background of his replacement, Bill Owens, should help calm any jittery shareholders: He was once vice chairman of the Joint Chiefs of Staff, the second-highest rank in the military.

He isn't, however, nearly as steeped in networking as Dunn, who worked in virtually every group in Nortel over a span of 28 years. Owens' most recent network experience was as CEO of Teledesic, a satellite broadband service company that dried up after the 2001 terrorist attacks drove up the cost of insuring satellites.

But Owens' pedigree is probably appropriate for the current business challenges. The market is changing fast, with aggressive low-cost challengers emerging from Asia and industry consolidation on the horizon.

One of his first moves was to reorganize the company into two groups, one facing carriers (instead of individual wireless, wireline, optical and other divisions) and one facing the enterprise.

For now he is spending the bulk of his time with carrier customers because he believes the market opportunities are greatest there and because he can reach through them to touch enterprise customers.

The enterprise "has not been the DNA of Nortel," Owens admits. But he says the future is about bundling and the company's broad product portfolio and history of innovation will let it compete effectively. "We have the most diverse range of products in the industry and put more into R&D on a dollar of sales basis than any company."

The primary opportunities Owens sees are around security and shifting to more of a services business, à la IBM. Regarding the latter, Owens says Nortel will offer services to help carriers and enterprises "deal with the operation of networks that are more and more complex."

He also expects to see industry consolidation over the next two to three years and says Nortel will be a consolidator, not a consolidatee. "For that we need cash, lower costs and revenue," he says. "We have our treasurer focused on cash."

Likely consolidation scenarios? "Everyone is talking to everyone," Owens says. "Chambers has made comments about us, but consolidation won't necessarily happen along the lines you might think. They might involve the opportunities I've talked about in security and services."

Getting Owens out and about is an important first step in healing Nortel. The company badly needs to show customers it is focused and moving toward a goal. Whether Owens' goals are optimal remains to be seen.

— John Dix
Editor in chief
jdix@nww.com

opinions!

Hats off

Regarding "Hack . . . hack back . . . repeat" (www.nwfusion.com, DocFinder: 3523): Say you go home to find someone has thrown a brick through your window, entered and rummaged through your stuff. What is the first thing you do? You call the police and they try to find the perpetrator. In the computer world, what do we do? Blame the builder for building an unsecure house.

Sure, we need to expect that software companies will produce software that is hardened against all attacks, but when we deal with groups who are jackhammering through the side of the vault, it is time to change our attitudes about the black hats of the world. We still seem to look at them as little more than vandals or petty thieves. We have to approach them for what they are: the organized crime and terrorist groups of the 21st century. We also must be willing to impose sanctions on countries that harbor these groups without any real attempt to stop them.

Only a fool believes that software can be made 100% secure against attack. While one side builds a tougher bunker, the other side is always coming up with a bigger bomb. It's time to speak out against the black hat community with just as much furor as we speak out against Microsoft.

Michael Miller
Colorado Springs

Legal stronghold

In his BackSpin column "Going, going . . . 321, gone" (DocFinder: 3529), Mark Gibbs paints the companies using the Digital Millennium Copyright Act as the bad guys, when they're simply using a tool given to them by the federal government. As with any bad law, people are going to use and abuse it. The root of the problem is Congress, not the movie studios. They'll do what they can to maintain a competitive edge, and they're enabled by poor legislation. The movie companies couldn't have put 321 out of business without the government's hammer.

Jeff Steinport
Grand Rapids, Mich.

Off the hook

I liked the editorial cartoon "Phishing season" (Aug. 9, page 34), in which a computer user is literally hooked through the lip by a fishhook from a phisher trying to get him to "verify" his credit card information. The people who come up with these phishing scams are pretty creative. What if we went to their bogus sites and entered bogus information? Can you imagine several hundred thousand bogus entries for the "poor" phishers?

This scheme would replace the user in the cartoon with a boot or a tire. Very appropriate, if you ask me.

Ken Diliberto
Pomona, Calif.

A better spyware solution

The story "On the lookout for spyware" (DocFinder: 3524) does not discuss a simple solution: Stop using Internet Explorer.

Sure, in the world of Web-based applications you cannot eliminate Internet Explorer's use, but you can seriously curtail it. By using alternative browsers such as Firefox, you can eliminate the influx of spyware/malware into your systems. This is a proactive approach rather than putting a Band-Aid on the gushing wound that is Internet Explorer. I have implemented Firefox on some PCs at work and for family and friends with great results. If you can get away without Internet Explorer, do so.

Robert Roth
East Setauket, N.Y.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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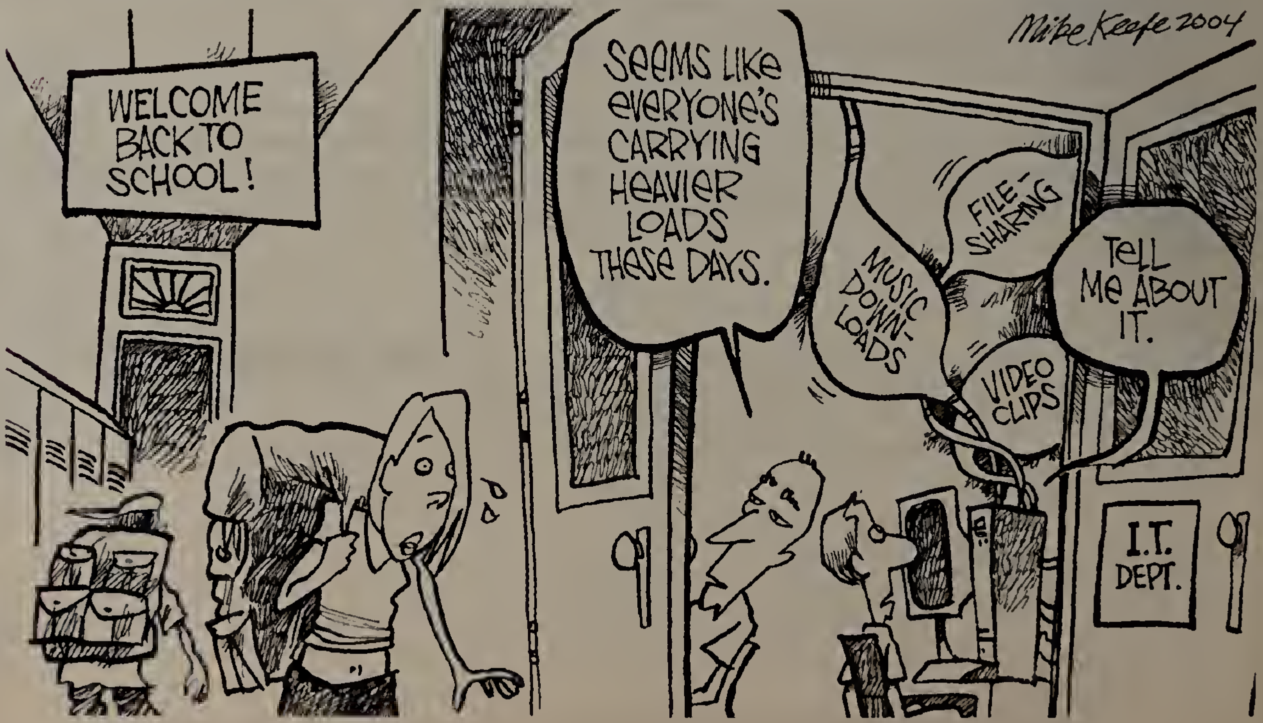
WELCOME BACK TO SCHOOL!
SEEMS LIKE EVERYONE'S CARRYING HEAVIER LOADS THESE DAYS.
MUSIC DOWN-LOADS
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I.T. DEPT.
Mike Keefe 2004

TOTALLY UNPLUGGED

Ira Brodsky

Wireless insecurity rising

In the past, wireless security concerns seemed exaggerated. Given the limited enterprise adoption of wireless LANs and mobile data, stories about researchers cracking wireless encryption codes in labs made a good read but hardly portended a widespread breakdown of network security.

Now users are buying WLAN gear and signing up for mobile data services in droves — often without consulting their IT departments. Suddenly, we are confronted with two problems. First, with users installing inexpensive WLANs and signing up for mobile data services on their own, there is a lack of consistent and well-planned security. Second, the rapid spread of wireless data products and services is creating security problems never before encountered.

Today, anyone can create a wireless network or wirelessly extend an enterprise network using inexpensive wireless routers and client adapters from major retail chains. But making it easier for hackers to access enterprise data is by no means the only security risk that companies face. Individuals intent on stealing music or uploading porn prefer to borrow someone else's network. And unauthorized wireless nodes can cause interference to authorized nodes, disrupting network operations.

There is also a flip-side problem. Thanks to inexpensive wireless adapters and chipsets with integrated wireless, a growing percentage of notebook PCs support Wi-Fi. According to wireless network software vendor Cirond, notebook PCs connected to wire networks may broadcast data or provide back-door access if ad hoc wireless networking mode inadvertently is left on.

Cell phone-based mobile data is mushrooming. For years, vendors and analysts assumed the goal was wireless access to the Web and e-mail. Instead, the killer applications are downloading ring tones, games and screen savers, and exchanging text, picture and voice messages.

The good news is that mobile phone networks are closed systems. You can download new software for your handset — but only software approved by your service provider. Still, the freedom to send and receive text, picture and voice messages from virtually anywhere creates unique security problems.

For example, text messaging during meetings can be used for more than just arranging lunch dates. It's also conceivable that cameras will become a standard feature on mobile phones. Consider the ramifications of employees and visitors having cameras with the ability to instantly transmit pictures to the Internet always at the ready.

A voice application of mobile data technology — push-to-talk service — could result in embarrassing interruptions and disclosures. Push-to-talk lets other users grab your attention by speaking over your push-to-talk handset's loudspeaker without ringing or waiting for you to answer as you would a regular phone call. If you forget to turn this feature off, someone else may blurt out who-knows-what over your phone during a meeting, in front of a customer or in a packed elevator.

The good news is dozens of companies are springing up to address these and other wireless security issues. Let's hope they do — and fast.

Brodsky is president of Datacomm Research in St. Louis. He can be reached at ibrodsky@datacommresearch.com.

Still, the freedom to send and receive text, picture and voice messages from virtually anywhere creates unique security problems.

ABOVE THE CLOUD

James Kobielus

SOA and the death of platforms

As high-tech buzz phrases go, service-oriented architecture is vaguer than most. SOA isn't a technology, product, service or protocol. But it's been mentioned in many marketing pitches lately, promising greater developer productivity and standards-based interoperability if you buy this vendor's application platform or that one's visual-modeling tool. Over the past three months, Sun, Oracle, Microsoft and IBM all announced products or initiatives for implementing SOA in their respective environments.

SOA is a substantial and growing body of practical techniques for designing shareable, reusable, interoperable Web services. Just as important, the past few years have seen the emergence of a universal, standardized, SOA-enabling middleware fabric built on the Web Services Description Language (WSDL), Simple Object Access Protocol (SOAP) and Universal Description, Discovery and Integration.

SOA is a disruptive approach to building distributed services. Until now, we've developed new functionality on and within concepts such as platform, application and language. Each of these concepts has traditionally had a well-defined sphere of reference: The platform hosted the application, and the application was developed in a language. Now all that is changing, thanks to the emergence of SOA.

The first of the old computing concepts to wither away will be the platform. This term originally applied to operating systems, then included application servers that implement a particular development framework (Java 2 Platform Enterprise Edition or .Net) over one or more operating systems. But the growth of standards-based, distributed Web services has made it clear that fewer and fewer business processes will execute entirely within the confines of a J2EE 1.3 server or Windows Server 2003, or Linux, but will execute across them all. When all platforms share a common environment for describing, publishing and invoking services, the notion of self-contained platforms disintegrates in favor of SOA, which is essentially a platformless service cosmos.

Another casualty of this evolution is the notion of applications as discrete, functional components that execute on particular platforms. SOA is founded on the notion of virtualization. Under this paradigm, services describe abstract interfaces within standard, platform-independent metadata vocabularies such as WSDL. The underlying service functionality may be provided from components on any platform without needing to change the interface. Under SOA, the application dissolves into a service that may have no fixed implementation but simply bids for on-demand networked software and hardware resources.

Programming languages also are becoming something that fewer developers touch directly. Visual model-driven development and automated code generation are at the forefront of the SOA revolution. You're more likely these days to see a vendor boast of its ability to support visual modeling in Unified Modeling Language than development in Java, C# or any other declarative programming language. For complex, orchestrated, multiplatform Web services, visual modeling is the most effective approach for specifying, implementing and maintaining the end-to-end logic and rules on which the service depends.

SOA has spawned a range of terms to describe what developers actually develop. IT professionals increasingly define their creations in terms of services, models and patterns, rather than platforms, applications and languages. The notion of patterns will become critical to discussions of distributed services. A pattern is a generic approach — such as service proxying or service coordination — to architecting interactions in the infrastructure. Every pattern defines its own abstract Web services functional elements and SOAP-based interactions.

Welcome to the dizzying new world of SOA. Platforms are dissolving, new concepts are taking over, and Web services will become everywhere shareable and reusable.

Kobielus is a senior analyst with Burton Group, an IT advisory service that provides in-depth technology analysis for network planners. He can be reached at (703) 924-6224 or jkobielus@burtongroup.com.

Platforms are dissolving, new concepts are taking over, and Web services will become everywhere shareable and reusable.

Behind-the-scenes with Internet Storm Center's Johannes Ullrich as he battles the MyDoom-O virus.

KEEPING VIGIL OVER THE 'NET

BY JASON MESERVE

AS a new variant of the MyDoom virus begins spreading across the Internet, slowing search engines to a crawl in the late morning of July 26, Johannes Ullrich jumps into action.

Ullrich, CTO at the SANS Institute's Internet Storm Center (ISC) and one of 30 "handlers" who cover the storm center round the clock, is on duty this morning. He doesn't have far to go to find the virus; there are already a bunch of copies in his e-mail in-box.

He gets to work, first saving a copy of the virus code (a file called instruction.exe), and then using VMWare software, which lets you run multiple operating systems on a single device, he executes the virus in Windows 2000 to see what it does.

By using VMWare on his SuSE Linux system, Ullrich can create an operating system sandbox that prevents permanent damage from a virus or rogue application. As soon as the VMWare session is restarted, the virtual Win 2000 session essentially is wiped out and a clean install is created. While most malicious applications use file encryption to help mask their intentions, a tool called LordPE lets Ullrich capture the program as it runs. The Ethereal protocol analyzer lets him see what network ports the virus is using and what type of traffic it generates on a packet-by-packet basis.

Ullrich observes MyDoom-O pinging three IP addresses on Port 1034 when it activates, but the three addresses don't respond. The remote systems could be overloaded with requests from infected machines or already taken offline by other concerned parties. Another possibility is that they're decoys to send parties like ISC and anti-virus vendors on a wild goose chase.

After getting no response to its pings, the virus moves on to the business of replicating. To Ullrich's surprise, this MyDoom variant does more than cull a local Web cache for potential e-mail addresses to target, as previous variants had. It goes out and searches Google, Yahoo, Altavista and Lycos for e-mail address in a given domain (such as @nww.com). The number of search queries generated by the virus results in a denial-of-service (DoS) attack against Google (both in the U.K. and for many users in the U.S.) and also affects the performance

OPEN 24 HOURS

IT'S AMAZING HOW THESE VIRUS WRITERS *GET SUCH SMALL CODE.* THEY SHOULD BE WORKING FOR SOME OF THE COMMERCIAL CODE VENDORS.

JOHANNES ULLRICH, Internet Storm Center

OPEN 24 HOURS

The ISC is basically a public service, funded by the SANS Institute. It tackles everything from viruses to malware to citizens asking for help with a security problem.

> “WE TRY TO RESPOND TO EVERY QUERY, *SO ONE CRITERIA FOR BEING A HANDLER IS TO BE ABLE TO* DEAL POLITELY WITH PEOPLE.”
>
> **JOHANNES ULLRICH,** Internet Storm Center

of the other three engines, according to reporting from Keynote Systems on the day of the attack.

MyDoom's interference with Google came on the same day the company announces an expected stock price for its upcoming IPO. But Ullrich doesn't think the virus was targeting Google. “The distributed DoS is an unintended side effect,” Ullrich says. “It wouldn't use four or five search engines if it were going to try to take one down.”

As Ullrich pores over access logs and code from this MyDoom variant, one might picture him sitting in a high-tech data center with rows of terminals and huge monitors. In reality, this key outpost in the global fight against Internet crime is a cluttered office in a spare bedroom of his white, two-story house in a quiet neighborhood outside Boston. SANS Institute is headquartered in Bethesda, Md.

There are two desks, one for him and one for his wife, a high-tech consultant. Ullrich's desk has a box on it that one of his two cats likes to lounge in while he works. A rack holds computer CDs and music discs from a range of artists including Enya, Bach and The Grateful Dead. A red punching bag nearby comes in handy for those really stressful days, Ullrich says.

He is the only full-time staffer among the 30 ISC handlers who span the globe and are on duty 24-7. The rest are volunteers who take turns watching over the Internet. Most have other jobs and aren't expected to be awake for their entire 24-hour shift. All the ISC handlers have technical backgrounds with varying specialties.

Ullrich's other SANS responsibilities include overseeing its Web sites. Throughout the day, Ullrich's cell phone vibrates on the desk, signaling a new text message alert from the SANS Web servers. They were getting overloaded with traffic from folks looking for MyDoom information.

Data comes into the ISC via a form on its Web site or through D-Shield, a service Ullrich developed that collects and analyzes firewall logs for suspicious activities including port scans. For the interesting stuff that comes in, ISC's goal is to help mitigate the damage in any way. For viruses, that means helping identify signatures for stemming the tide. For malware, it could mean contacting ISPs to shut a site down or contacting the proper authorities when crimes have been committed.

The week before the MyDoom-O outbreak, someone had sent ISC a file containing user names and passwords that were collected by a key-logging worm that recorded anything a user entered into a site he accessed with secure HTTP. In May, a file with 10,000 account numbers was dumped into ISC's lap.

“We try to close the loop with the sites involved,” Ullrich says of such sensitive information “It's about public awareness, too.”

Each on-duty handler posts a diary entry detailing the interesting items of the day. On slow days, they're written up at the end of the shift, but on days like this, the diary is being constantly updated with new information as it's discovered. Ullrich's diary from July 26 can be found at www.nwfusion.com, DocFinder: 3521.

Despite ISC's hard work and dedication, their efforts are not always successful. An attempt to track malware might only lead to a hacked machine that is acting as a relay, not to the author. “Sometimes it's easier to follow the money trail,” Ullrich says. Many of today's viruses are written to make a profit (either by sending spam or stealing information). “The hard part is getting the money transferred.”

Even the money trail can go cold or lead to a wall. There's a group in Russia that is pretty well known, but the Russian Mafia most likely protects them, Ullrich says.

Phishing expeditions could be better contained, but many corporate sites aren't interested in fighting back. “At the end of a phish, they usually redirect you to the real site,” Ullrich explains. “You could sniff for when that happens and pop up a warning to users telling them they've been scammed.”

He adds that some phishing e-mails use the actual graphics from the site being spoofed (like the PayPal logo), so the legitimate site could check the referral and replace the graphic with a warning.

In the case of the MyDoom-O, Ullrich and other handlers received it like any typical user: in an e-mail in-box. The virus spreads either as a faked bounce-back message or as a note from a system administrator claiming the targeted user was sending spam and the attached file would fix the problem. “It's the usual antics,” Ullrich laments, adding that SANS doesn't automatically strip out all suspicious attachments because it wants to investigate the new stuff coming in.

Ironically, when he first saw the faked bounce messages in his in-box, he thought they were real and simply the normal e-mail errors ISC receives as part of the D-Shield service.

Ullrich's analysis shows that the requests MyDoom makes to the search engines do not stand out in any way from a regular request, meaning the affected search engines cannot just set up a filter to block queries coming from the virus. It also mimics the version of a Web browser installed on the infected machine to help blend in with everyday HTTP requests. Early on, Ullrich changed his router's IP tables to limit outgoing traffic from his “infected” machine. With an estimated 300,000 infected machines, Ullrich doesn't want to be piling on the affected search engines as he does his investigation.

Within a few hours of the initial infections, the major anti-virus vendors have released updated signature files that will detect the virus. But ISC handlers keep working to figure out everything the virus might do. “One problem with some of the anti-virus vendors is they only look at the [virus] signature, once they reverse-engineer it to get the signature, they're basically done,” Ullrich says.

He has uploaded the code to the ISC “zoo,” an FTP site where handlers share interesting code so others with expertise in viruses can help in the investigation.

MyDoom is only 30K in size, but most of the code is binary. Ullrich opens the file with a text editor to look for human-readable strings that might provide more insight into how the virus works and its intended purpose. It appears as if the virus looks for the string “_AT_” (a common way to print an e-mail address in an effort to avoid spam bots) in its search for potential e-mail targets. There's also a list of e-mail addresses it won't send to, such as anti-virus vendors, Hotmail or Yahoo accounts.

The virus author also put in very explicit fake e-mail headers to try to avoid spam detectors. “It fakes like it is sending from Outlook Express with a practical version number,” in this case 6.00.2600.0000, Ullrich says.

Like previous versions of MyDoom, this one too seems to be listening on certain ports for commands. Ullrich pings each port, but the virus does not react. He suspects a certain ping sequence or HTTP header code is needed to awaken the virus.

“It's amazing how these virus writers get such small code,” Ullrich says. “They should be working for some of the commercial code vendors.”

By 4 p.m. EST, all the affected search engines seem to be fully functional, and infected machines around the globe are being cleansed. Ullrich plans to spend a few more hours trying to decode the virus's true intentions before calling it a night. His efforts paid off. The day after the initial outbreak, ISC and others discovered MyDoom-O dropped the Zindos. A backdoor on infected machines, which could be used in a DoS attack against Microsoft.com.

There's a joke among the handlers about who best takes care of the Internet when on duty. “Guess I didn't do well today,” Ullrich says with a smile. ■

Handler's diary — July 26, 2004

My Doom-O hits search engines hard.

Details from Ullrich's blog

MyDoom creates the executable files C:\Windows\services.exe and java.exe, and executes them.

These URL templates are used to query the search engines. '%s' is replaced with the search string.

```
http://search.lycos.com/default.asp?lpv=1&loc=searchhp&tab=web&query=%s &nbq=%d
www.altavista.com/web/results?q=%s&kgs=0&kls=0 &n=%d
http://search.yahoo.com/search?p=%s&ei=UTF-8&fr=fp-tab-web-t&cop=mss&tab= &num=%d
www.google.com/search?hl=en&ie=UTF-8&oe=UTF-8&q=%s
```

Sample anti-virus policy
http://isc.sans.org/papers/antivirus.pdf

Anti-virus vendor links:
www.trendmicro.com/vinfo/virusencyclo/default5.asp?VName=WORM_MYDOOM.M
http://us.mcafee.com/virusInfo/default.asp?id=description&virus_k=127033
www.sophos.com/virusinfo/analyses/w32mydoomo.html
http://securityresponse.symantec.com/avcenter/venc/data/w32.mydoom.m@mm.html
www.f-secure.com/v-descs/mydoom_m.shtml
www3.ca.com/securityadvisor/virusinfo/virus.aspx?id=39711
www.pandasoftware.com/virus_info/encyclopedia/overview.aspx?IdVirus=49861&sind=0
www.viruslist.com/eng/alert.html?id=1927068
www.grisoft.com/virbase/virbase.php?lng=us&type=web&action=view&qvirus=086fda5c5c9e7000

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SECTOR SPOTLIGHT: HEALTHCARE

How emerging technologies are transforming key vertical industries

VoWi-Fi keeps nurses on call

Hospitals deploy voice over 802.11 wireless LANs to save time and lives.

BY SUSAN BREIDENBACH

Hospitals are finding voice over wireless LANs to be just what the doctor — and more to the point, the nurses — ordered. While VoWi-Fi technology is hardly commonplace yet, its growing acceptance in life-or-death situations is a testament to the value of convergence and mobility.

"Healthcare has high-value people in information-intensive jobs who move around constantly and play different roles at different times," says Eric Brown, a vice president at Forrester Research. "It's the perfect combination for VoWi-Fi."

VoWi-Fi also helps boost productivity amid an acute nursing shortage by eliminating the need for nurses to waste time searching for phones to use. "Hospitals need VoWi-Fi because nurses don't sit behind desks," says Craig Mathias, principal analyst at Farpoint Group.

The need to improve communications and provide better access to resources drove Overlake Hospital Medical Center onto VoWi-Fi's bleeding edge three years ago.

"Our two biggest issues were roaming and security," says Kent Hargrave, CIO of the 337-bed facility in Bellevue, Wash. Overlake settled on Airespace for its 802.11b/g WLAN infrastructure, citing superior roaming capabilities, ease of implementation and management, and scalability. "It also cost about 50% of the other solutions," Hargrave says.

The client devices and voice switches at Overlake are mixed. Clinicians needing hands-free communication are equipped with Vocera badges, while handsets include Cisco 7290s and the Avaya/SpectraLink 3626.

Cisco's Call Manager is deployed in one department while an Avaya Media Server serves the rest of the hospital. The Avaya product is the current favorite, integrating with Overlake's Avaya PBX and extending voice mail and call forwarding to the wireless network. But increasing wireless handset use to enter medical data via XML eventually could tip the scales in Cisco's favor, Hargrave adds.

Because Overlake deployed its WLAN before the 802.11i standard was finalized, the hospital shored up security by implementing Wi-Fi Protected Access and configuring the access points so they don't broadcast Server Set Identifiers. Products based on 802.11i will be evaluated as they become commercially available.

Children's Hospital Central California in Madera let VoWi-Fi mature a bit before jumping on board. The 255-bed pediatric hospital started putting voice on its 802.11b WLAN in mid-2003.

The network includes an Avaya PBX, SpectraLink-manufactured Avaya 3606 and 3626 handsets and Cisco 1200 access points. Wired Equivalent Privacy security is enhanced by segregating the phones on a separate virtual LAN.

A pilot project revealed bugs requiring firmware upgrades. The centralized Dynamic Host Configuration Protocol servers weren't on the same subnet with the phones, and requests had to go across routers in packets of at least 300 bytes. The phones wouldn't allow packets that large until SpectraLink developed a fix.

Similarly, Cisco had to tweak its access points to reduce an SNMP polling latency that went unnoticed when the WLAN was data-only. The access points were pausing the radio signal for about a second whenever they received a request from the WaveLink Mobile Manager management application.

"Still, it only took a one-month pilot to get these bugs worked out," reports Joseph Egan, Children's network engineer. Children's is now testing a push-to-talk feature on the 3626 phones to broadcast Code Blue alerts that summon emergency teams.

Converging communications

At the UC Davis Medical Center (UCDMC) in Sacramento, a wireless hospital-wide implementation began this spring.

"We've been using phones, voice mail, e-mail, individual pagers, group pagers, nurse-call pagers, overhead paging, intercom systems, radios, cell phones, fax, text messaging and clinical messaging on our EMR (electronic medical records) system," says Lisa Trask, a registered nurse and an associate director in UCDMC's patient care services division. "It's insane."

The healthcare organization is reducing device types and communication methods to three basic sets. Desk workers have traditional phones. Mobile clinicians who have no on-call responsibilities outside the hospital get Vocera badges. And on-call administrators and clinicians get cell phones — ultimately the multiservice handsets that can roam between cellular and Wi-Fi networks.

AT A GLANCE: HEALTHCARE

IT spending	The $1.5 trillion healthcare industry accounts for nearly 28% of total U.S. IT spending, InStat reports, and its IT expenditures are growing 5% to 6% each year. However, healthcare spending on wireless is increasing much faster — 20% to 25% annually.
Wireless investment	FocalPoint Group expects the healthcare industry to be spending $7 billion on wireless by 2010.
Nursing shortage	The U.S. Bureau of Labor Statistics says more than 1 million new and replacement nurses will be needed by 2012.

"Over the next several years, we plan to reduce phone lines by 40% and pagers by 90%," Trask says. "Bandwidth is our biggest consideration, and we are upgrading to 802.11g next year."

The VoWi-Fi initiative dovetails with UCDMC's implementation of an EMR system and migration to electronic order entry and clinician documentation. The hospital is working with vendors on a voice-login interface that clinicians can use to dictate directly into the EMR system from the Vocera devices.

Unlike most early VoWi-Fi adopters, Indiana Heart Hospital (IHH) in Indianapolis was designed from the ground up using IP telephony.

The hospital was opened in 2002, with a Cisco infrastructure and SpectraLink handsets. Data runs over 802.11a, and voice is on a separate 802.11b VLAN.

Bedside charting and order entry are now done via 350 wired PCs that blanket IHH. But going forward, IHH is moving to Cisco's XML-enabled handsets.

"The marriage of voice and data on a wireless appliance will be huge," asserts Kevin Hartzburg, telecom manager for the Community Health Network, to which IHH belongs.

The bottom line

Egan and Hartzburg agree that if a network already includes a robust WLAN infrastructure and wired VoIP, the cost of VoWi-Fi should be little more than the price of the handsets. While volume discounts vary, hospitals can buy Vocera badges and Cisco 7920 handsets for less than $500, including the software license and extra batteries.

In general, though, hospitals are not finding hard-dollar savings. The payoff is recaptured clinician time, and less tangible returns such as enhanced communication and increased staff and patient satisfaction.

Breidenbach is a freelance writer in Nevada. She can be reached at sbreide@aol.com.

CLEAR CHOICE TEST

10G Ethernet workgroup switch

Extreme's S400 raises the bar for workgroup switches

■ BY DAVID NEWMAN, NETWORK WORLD LAB ALLIANCE

Enabling gigabit to the desktop — or to lots of desktops — is the name of the game for Extreme Networks' new Summit 400-48t, a 10G Ethernet workgroup switch.

In *Network World's* exclusive test, we pushed more than 70 million packets per second through the S400. Results were generally good. The switch delivered low, consistent delay under heavy loads, and it offers a long list of features, including 802.1X authentication for security.

On the downside, the S400's optional 10G Ethernet module is a bit pricey for a workgroup switch, although at about $4,000 per 10G Ethernet port (plus optics) it's still competitive. Also, the S400 posted subpar numbers in some tests of jumbo frames. On balance, though, the S400 is a more-than-capable performer: In fact, it's the fastest wiring closet switch we've tested.

Net Results

Summit 400-48t

OVERALL RATING **4.4**

Company: Extreme Networks, www.extremenetworks.com. **Cost:** Base switch with 48 10/100/1,000 ports, $8,995; advanced software license, $995; 2-port 10G bit Ethernet XENPAK module, $7,995; 10G XENPAK optics, $4,995 each; external power suply and rack unit, $990; system as tested, $26,980. **Pro:** High port density, line-rate 10-gigabit Ethernet performance, security features. **Con:** Problems handling jumbo frames.

The breakdown	
10G Ethernet baseline performance (covers througput, delay, and jitter) 20%	5
Gigabit Ethernet baseline performance (covers throughput, delay, and jitter) 20%	3
Performance with maximum ACLs (covers throughput, delay, and jitter with maximum ACLs applied) 10%	5
Rapid spanning tree performance (measures failover time using 802.1W rapid spanning tree) 10%	3
SSH and 802.1x support 15%	5
Features 25%	5
TOTAL SCORE	4.4

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

The S400 fits in 1U and offers 48 10/100/1000M bit/sec copper ports, with an optional module for two 10G Ethernet interfaces. Features include support for major routing protocols, IPv4 multicast and up to 4,096 virtual LANs. External redundant power is also an option.

Performance tests

We conducted separate tests of the S400's 10G Ethernet and Gigabit Ethernet handling. Because the 10G Ethernet interfaces fit in an optional module, users can buy the switch with 10/100/1000 copper interfaces and add 10G Ethernet later.

Our 10G Ethernet tests measured how quickly the S400 could move traffic between 10G Ethernet uplink ports and Gigabit Ethernet downlink (edge) ports. We configured a Spirent Communications SmartBits traffic generator/analyzer to send test frames to the S400's uplink and downlink ports

In a nutshell, the S400 delivered line-rate throughput in all the 10G Ethernet test cases we tried (see graphic, right). These included baseline tests at Layer 2 and Layer 3 and tests with one and two 10G Ethernet interfaces exchanging traffic with 10 and 20 edge gigabit interfaces. The S400 didn't drop a single frame in any of these tests.

Access control lists (ACL), which can severely degrade performance on some switches, posed no problem for the S400, either. We reran the 10G Ethernet baseline tests with the maximum number of ACLs applied to every switch interface; for the S400, that is 124 ACLs per port on all 50 ports. Again, the switch delivered line-rate throughput.

Delay was also low and constant across all our 10G Ethernet tests (see graphic, page 49). The average delay and jitter numbers we observed are comparable to other high-performing 10G Ethernet backbone switches we've tested. Even the highest maximum delay number we observed — 104.4 microsec when moving jumbo frames — is nowhere near enough to have an appreciable effect on application performance.

Extreme's new Summit 400-48t, a 10G Ethernet workgroup switch, offers high port density, rich feature set and good performance.

Trying to get a Gig

The S400's performance in gigabit-only tests, while generally good, didn't match the flawless levels in the 10G Ethernet events.

Throughput was equivalent to 92% of line rate or better in all the tests we ran using standard Ethernet frame lengths. We observed a slight difference depending on whether we used random or non-random media access control (MAC) addresses; on production networks, random addresses are far more common. This won't necessarily harm application performance, because few (if any) production networks have sustained utilization over 90%.

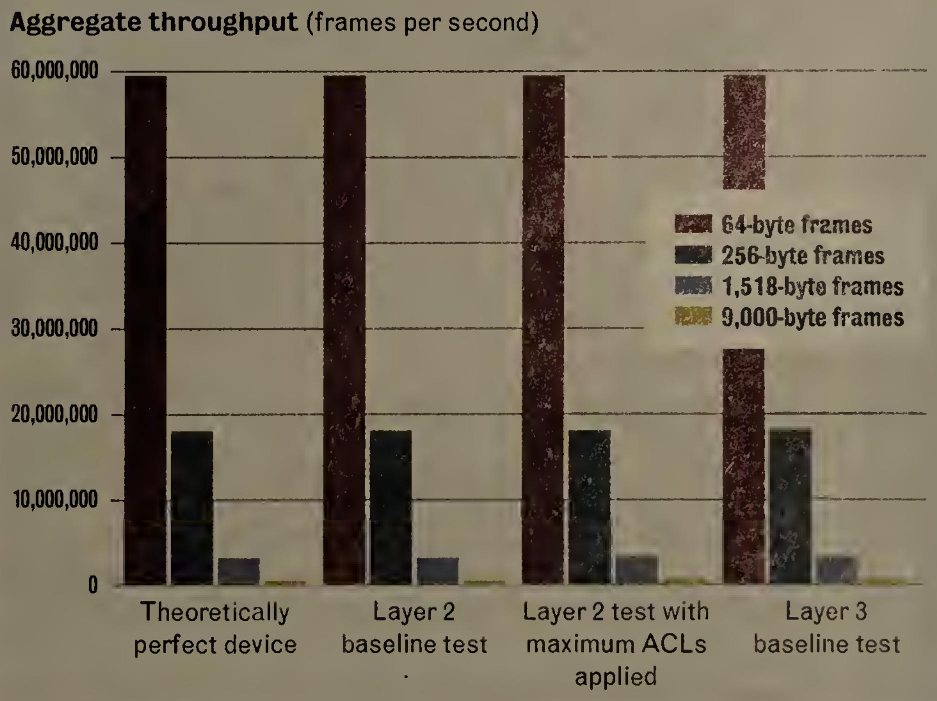
Handling jumbo frames was another story. When we offered the S400 repeated iterations of 9,000-byte frames with a random pattern of MAC addresses, throughput was zero. There was no rate at which the device would forward traffic without at least some loss. Throughput rose to the equivalent of 81% of line rate when we repeated the test using non-random MAC addresses. Again, random MAC addresses are the rule on production networks.

More seriously, the S400 dropped

See Extreme, page 49

Measuring 10G throughput

In our test of how quickly Extreme Networks' new Summit 400-48t switch — with its two-port 10G Ethernet module installed — could move traffic between 10G Ethernet uplink ports and gigabit Ethernet downlink (edge) ports, the combination delivered line-rate througput in every case.



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Extreme

continued from page 47

frames of any length after we ran repeated iterations of the jumbo tests with random addresses. Rebooting the switch cleared the problem, but left us wondering whether the beta software we tested had issues with memory management and/or MAC address hashing.

Extreme acknowledged the issue, characterizing the result as "not acceptable." At press time, Extreme was working on a fix.

It's important to note that these results are reproducible only in controlled lab conditions. Those conditions — repeated 60-second blasts of traffic at or near line rate on 48 ports in a fully meshed pattern — are highly unlikely to occur on production networks.

Even with the jumbo and MAC address issues we saw, delay and jitter remained remarkably low. The worst-case delay number of close to 200 microsec with jumbo frames with random MAC addresses is nowhere near high enough to have an effect on application performance.

Jitter was also remarkably low, which augurs well for VoIP and video applications. With standard-sized frames and random MAC addresses, maximum jitter was about 3 microsec — at least an order of magnitude below the point where voice or video applications would suffer.

Spanning Tree failover

We assessed the S400's support for Layer-2 failover by setting up 802.1w rapid spanning tree on a pair of S400 switches. While offering traffic to one switch, we disconnected a primary link, forcing the switch to redirect traffic onto a secondary link. Over repeated trials, the S400 reconverged in an average of 1.091 seconds. That's not a bad result, but it's not near the tens-of-milliseconds numbers other 10G Ethernet backbone switch/routers that typically use more powerful processors.

Extreme showed off two security features in the S400: 802.1X authentication and Secure Shell (SSH) for remote access. Already widely used in wireless LANs, 802.1X authentication can enforce access through essentially any device — including wiring closet switches.

Extreme demonstrated basic port-based 802.1X authentication along with more extensive "network logon" features. With port-based authentication, the S400 granted access to any user that requested authentication on a given port (provided that user's credentials existed on an authentication server).

For MAC-based authentication to happen, a user's request had to originate not only from a given port, but also from a given MAC address. This safeguard prevents gaming or other cases of unauthorized access where a user might attach a hub and multiple devices to a switch port.

The final authentication feature we tested was a captive-portal mode. Here, the switch intercepts any URL headed for a server on the internal network. If the user hasn't yet been authenticated, the S400 performs "URL hijacking" by returning a logon screen to the user. If the user's credentials check out, only then will the S400 return the URL the user requested. The S400 handled all authentication modes with no problems.

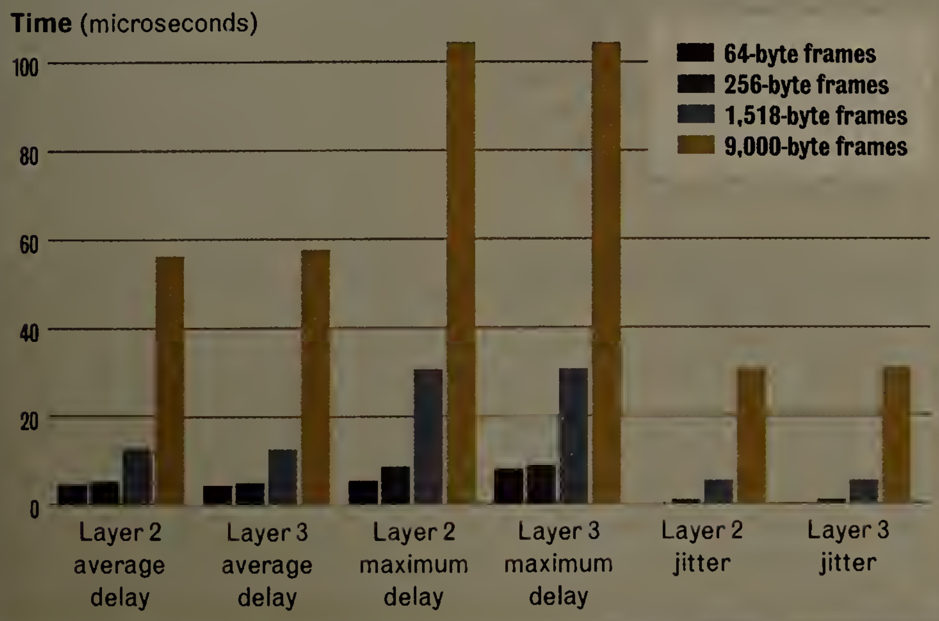
When it comes to secure remote access for management, the S400 is a standout. The device supports SSH Version 2 only, and not the vulnerable first version of the SSH protocol. Furthermore, enabling SSH disables unsecure access methods such as telnet or HTTP. We also checked the S400's version of SSH against multiple databases of security vulnerabilities. SSH support on the S400 had no known vulnerabilities at press time.

Even considering the relatively minor issue of jumbo handling on gigabit links, the S400 continues Extreme's tradition of building high-performance Ethernet switches. The switch's high port density, rich feature set and good performance make it a strong candidate for network managers looking to add more capacity to their wiring closets.

Newman, a Network World Test Alliance partner, is president of Network Test in Westlake Village, Calif. He can be reached at dnewman@networktest.com.

Measuring delay

Delay measurements for the Extreme Networks' S400-48t were low and constant across all our tests. Even the highest maximum delay number we observed — 104.4 microsec when moving jumbo frames — would not have an appreciable effect on application performance.



Thanks

■ *Network World* would like to gratefully acknowledge the support of Spirent Communications, which supported this project with its SmartBits traffic generator/analyzer, including XLW-3721 10G Ethernet cards and LAN-3325 TeraMetrics XD 10/100/1000 Ethernet cards.

How We Did It

We assessed Extreme Networks' S400 in terms of its performance, security, and features. (Access the complete methodology at www.nwfusion.com, DocFinder: 3637.)

We measured the device's 10G Ethernet and Gigabit Ethernet baseline performance; performance with maximum access control lists (ACL) enabled; and performance with Rapid Spanning Tree (RST) bridging. We also verified the switch's 802.1X authentication features.

For the 10G Ethernet baseline tests, we offered traffic from the Spirent Communications SmartBits traffic generator/analyzer in a partial mesh topology to one 10G Ethernet interface on the core (uplink) side of the switch and 10G Ethernet interfaces on the edge (downlink) side of the switched. In separate test runs, we offered 64-, 256-, 1,518-, and 9,000-byte frames. We measured throughput (the highest rate the device could forward traffic with zero loss); average and maximum delay (the amount of time the switch held up frames in flight); and jitter (the amount of variation between delay measurements).

We used 64- and 1,518-byte frames because they are the minimum and maximum frame lengths, respectively, in standard Ethernet. The 256-byte frame size approximates the average frame length of 200 to 300 bytes as observed on Internet backbone links. The 9,000-byte size is a jumbo frame; while it is not standard Ethernet, this size is best for bulk data transfer, and it is widely supported by makers of gigabit and 10G Ethernet devices.

Because the S400 has two 10G Ethernet interfaces, we repeated this test in a configuration with 20 Gigabit Ethernet edge interfaces and two 10G Ethernet interfaces.

In the Gigabit Ethernet baselines, we offered traffic to all 48 Gigabit Ethernet edge interfaces. In this test, we configured the SmartBits to use a fully meshed pattern, meaning frames offered to each interface were destined for all other interfaces. We used the same metrics of throughput, delay and jitter as in the 10G Ethernet baselines.

For the throughput tests, the goal was to find the maximum rate the switch would forward with zero loss. In the delay tests, we offered traffic at 10% of line rate.

In the maximum-ACL test, we offered the same traffic as in the Gigabit Ethernet baselines. This time, however, Extreme configured the S400 with the maximum number of ACLs supported — in this case, 124 entries on all 50 interfaces. The first 123 entries were to drop traffic, and a final entry permitted all other traffic. Before running the performance test, we spot-checked the "drop" cases to verify the ACLs were working.

To test 802.1w RST Protocol, we set up a spanning tree between two S400 switches. We configured SmartBits to offer one unidirectional stream of 64-byte frames at a rate of 1 million frames per second. At least 10 seconds into the test, we physically disconnected the active link, forcing the spanning tree to fail over to the interface that previously was in blocking mode. We derived failover time from packet loss; with an offered rate of 1 million frame/sec, each dropped packet meant 1 microsec of failover time.

For the 802.1X authentication tests, we connected client and server through the switch, with the switch acting as authenticator. We verified the ability to gain access to network resources using various modes, including port-based (the switch granted access because the client was on a particular port); media access control address-based (the client was on a particular port and had a particular MAC address); and Web-based (the switch intercepted URLs and replaced it with one of its own until the user authenticated).

For the authentication tests, the authentication server ran Windows 2000 Advanced Server and provided Active Directory, Dynamic Host Configuration Protocol, DNS and RADIUS services. The client ran Windows XP Service Pack 1 and Internet Explorer 6. We configured server and client to authenticate using Extensible Authentication Protocol/Transport Layer Security.

Executive enforcers

Chief compliance officers ensure corporations toe the line.

■ BY STACEY COWLEY

The wave of accounting scandals that swept through corporate America a few years ago and the resulting Sarbanes-Oxley Act have intensified the pressure on businesses to keep their books and conduct clean. As companies work to develop more-stringent corporate controls, an increasing number of them are adding chief compliance officers to their executive suite.

Compliance officers tend to have legal or financial backgrounds and rarely come from IT. But IT directors should know about the position because in many cases they'll have frequent interaction with the person who holds the compliance officer post.

Cheryl Wagonhurst, who joined Tenet Healthcare in Santa Barbara, Calif., last year as its chief compliance officer, includes IT representatives in the group of about a dozen company executives who work together on compliance initiatives.

"Our compliance is very systems-based. That's the key to making sure that the channels of communication are open, and IT has played a key part of developing those systems," she says. "They've designed database systems for us and put in place other processes that allow us to better communicate the information we need to track."

The compliance officer job description isn't entirely new: Firms in heavily regulated industries, including financial services and pharmaceuticals, have long needed executives to enact and enforce compliance policies. But companies that previously distributed compliance duties among executives in several departments now assign those responsibilities to a dedicated executive.

"This is a division of labor. Two years ago, you wouldn't have found many of these people anywhere," says Steve Mader, CEO of executive search firm Christian & Timbers in Boston. "We've been approached at least a dozen times over the last year."

Filling the position isn't easy or inexpensive. Chief compliance offers usually report directly to a company's CEO or board and need years of expertise. For larger organizations, salaries start at about $250,000 and can climb into the high six figures, Mader says. Candidates tend to come from financial or legal backgrounds.

The job can vary widely from company to company, as businesses tailor the position to their specific needs. At a healthcare organization, navigating the intricacies of the Health Insurance Portability and Accountability Act (HIPAA) might be the officer's top priority. At a company recently caught breaking laws, adding and checking financial control mechanisms might be the first task.

Computer Associates, which is rebuilding after an accounting fraud decimated its management ranks, says it is recruiting for the newly created position. And in at least one scandal-scarred industry, having a chief compliance officer is now compulsory. A new Securities and Exchange Commission rule requires mutual funds to have chief compliance officers installed by early October.

Mortgage financier Freddie Mac in McLean, Va., recently decided to create a chief compliance officer role. "We had historically asked a variety of people in control functions and business functions to assume compliance-related responsibilities, and it seemed appropriate to bring all that together," says Jerry Weiss, who took on the position in October. He previously spent 10 years at Merrill Lynch's fund management division, where he ultimately served as the group's global head of compliance.

Weiss' first priority was to assess Freddie Mac's compliance culture and to conduct a legal and regulatory gap analysis. While his most direct day-to-day work is done with the front-line managers of Freddie Mac's various businesses, his office coordinates with several other departments, including legal, finance, operational risk management, and information systems and services.

Weiss is collaborating with Freddie Mac's IS group to develop Web-based training on compliance and business ethics for managers. He also has partnered with Freddie Mac's IS team to create monitoring and surveillance tools to ensure the company's investment securities are traded in a manner consistent with regulatory guidelines.

"We view IS as a key partner in allowing us to first develop a vision for our compliance program, and ultimately implement and execute it," Weiss says.

But not all companies have their IT and compliance strategies aligned. A recent Meta Group report found that CIOs are rarely involved in the final decision-making stages of developing compliance-solution processes. With compliance budgets rising quickly — half the companies surveyed without a fund for compliance initiatives intend to create one within the next 12 months — CIO involvement in planning is particularly critical, Meta says.

Terri Curran, a longtime IT consultant, sees compliance duties seeping into the list of tasks falling to IT strategists, particularly at smaller organizations where executives wear multiple hats.

Tenet Healthcare's chief privacy officer, Connie Emery, found her career path shifting along those lines as the company's compliance responsibilities increased. Initially Tenet's security officer, she took on the privacy role as regulatory requirements such as HIPAA linked the functions. "It's hard to separate the two. You can't have privacy without security," she says.

HIPAA, Sarbanes-Oxley and a California data-security law known as SB 1386 have pushed Tenet to scrutinize its entire data infrastructure. "We had to inventory all of our systems. We have over 1,300 clinical applications. Initially, the difficulty was just in getting the inventory completed," says Emery, who collaborates with Wagonhurst's office. "Then we did risk analysis to identify areas to address. There were some issues with access controls. We're putting corrective action in place and making progress on our remediation plans."

As companies sort out their internal tangles and keep their executives from running afoul of new laws, expect a growing number to install compliance officials. Adding the position is one way for boards and CEOs, who now have to personally sign on the dotted line to vouch for their organization's good corporate conduct, to assuage nightmares about hatching the next Enron.

Cowley is a correspondent with the IDG News Service. She can be reached at stacy_cowley@idg.com.

LEGISLATIVE MANDATES

Regulation: Gramm-Leach-Bliley Act (also referred to as the Financial Modernization Act of 1999).

Applies to: Financial institutions, such as banks and securities firms, and related businesses, such as lenders and financial counselors, that have access to protected information.

Deadline: Most provisions took effect in 2001.

What it means to IT: Organizations must enact safeguards to protect consumers' financial data. Technology is critical for enforcing provisions such as the act's opt-out rules, which let a customer prevent financial institutions they do business with from sharing their data with businesses not affiliated with the customer.

Regulation: Health Insurance Portability and Accountability Act (HIPAA)

Applies to: Healthcare providers and related businesses that receive protected information.

Deadline: The first set was issued in 2002, but more are coming. April 21, 2005, is a major deadline for compliance with the other security regulations.

What it means to IT: Companies already have had to meet HIPAA deadlines for complying with privacy rules, so most affected organizations already have the outlines of their HIPAA strategies worked out. The 2005 deadline relates to protection of electronic information; CIOs and CTOs will be intricately involved in ensuring their companies have systems and controlled processes in place for handling sensitive data.

Regulation: Sarbanes-Oxley Act

Applies to: U.S. publicly traded companies.

Deadline: Staggered. The looming one is compliance with Section 404, which requires companies to report on their internal financial controls. Rolled back several times, the Section 404 deadline is now set for Nov. 15 for the first wave of affected companies, those with a public float of at least $75 million.

What it means to IT: The act requires deep visibility into companies' finances, controls, operations and processes. For some companies, gaining that visibility will require implementing entirely new systems. For most, it means a thorough examination and update of those already in place, a process requiring collaboration between IT and other corporate departments.

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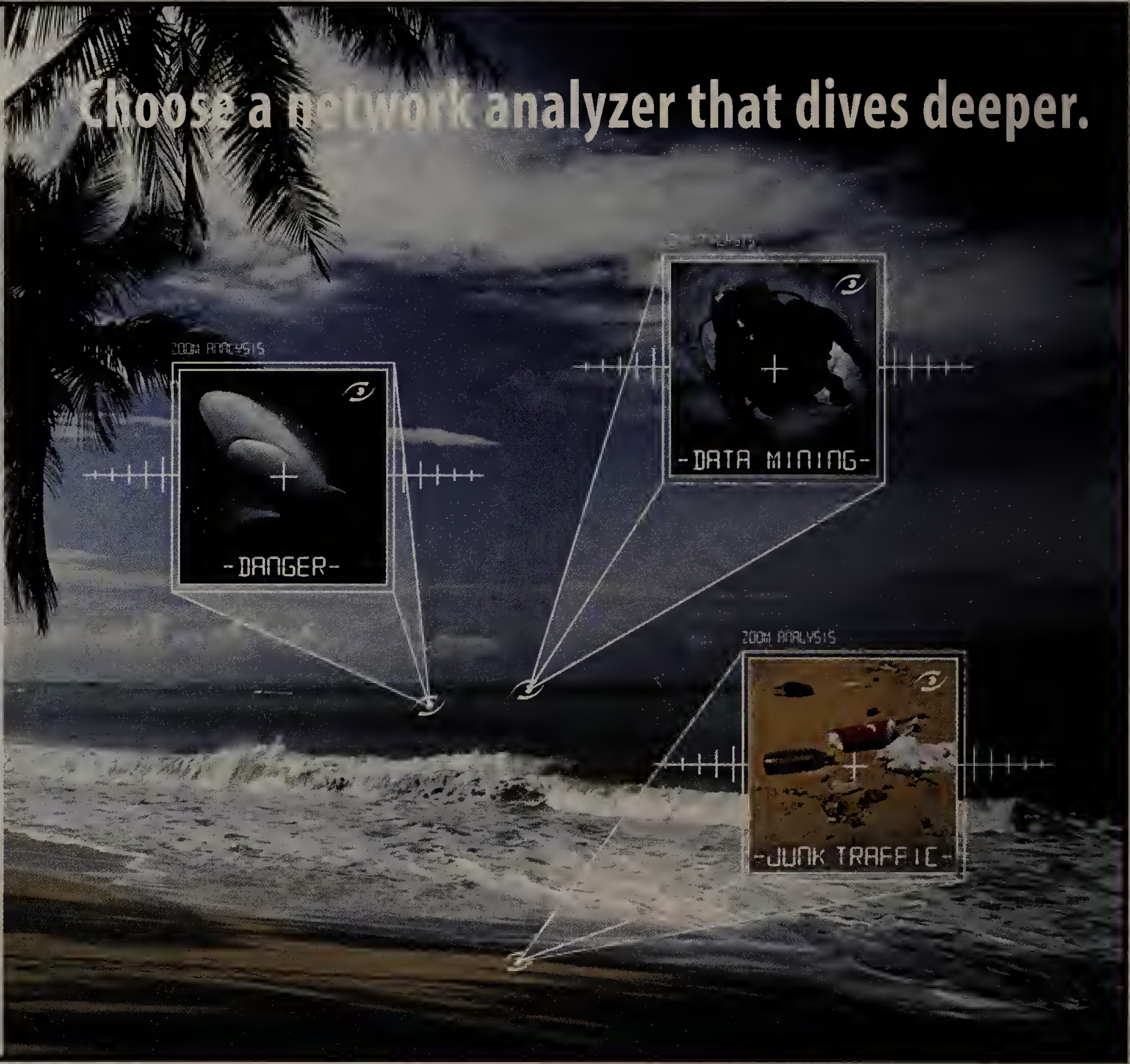

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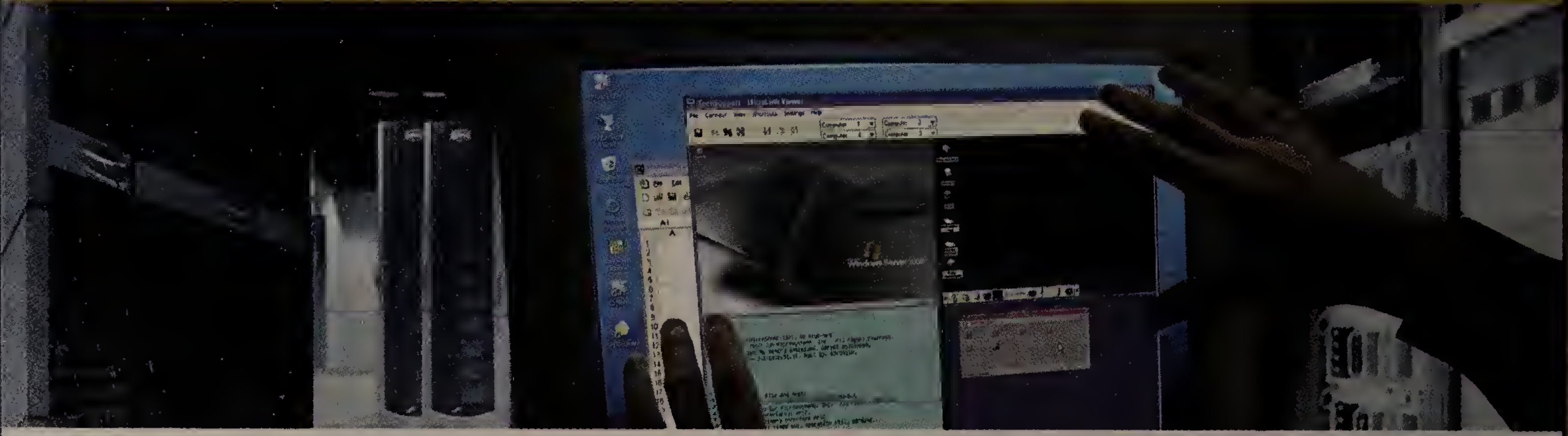

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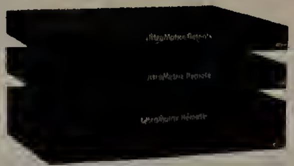

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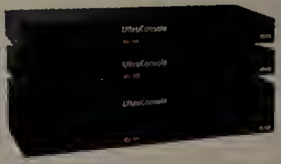

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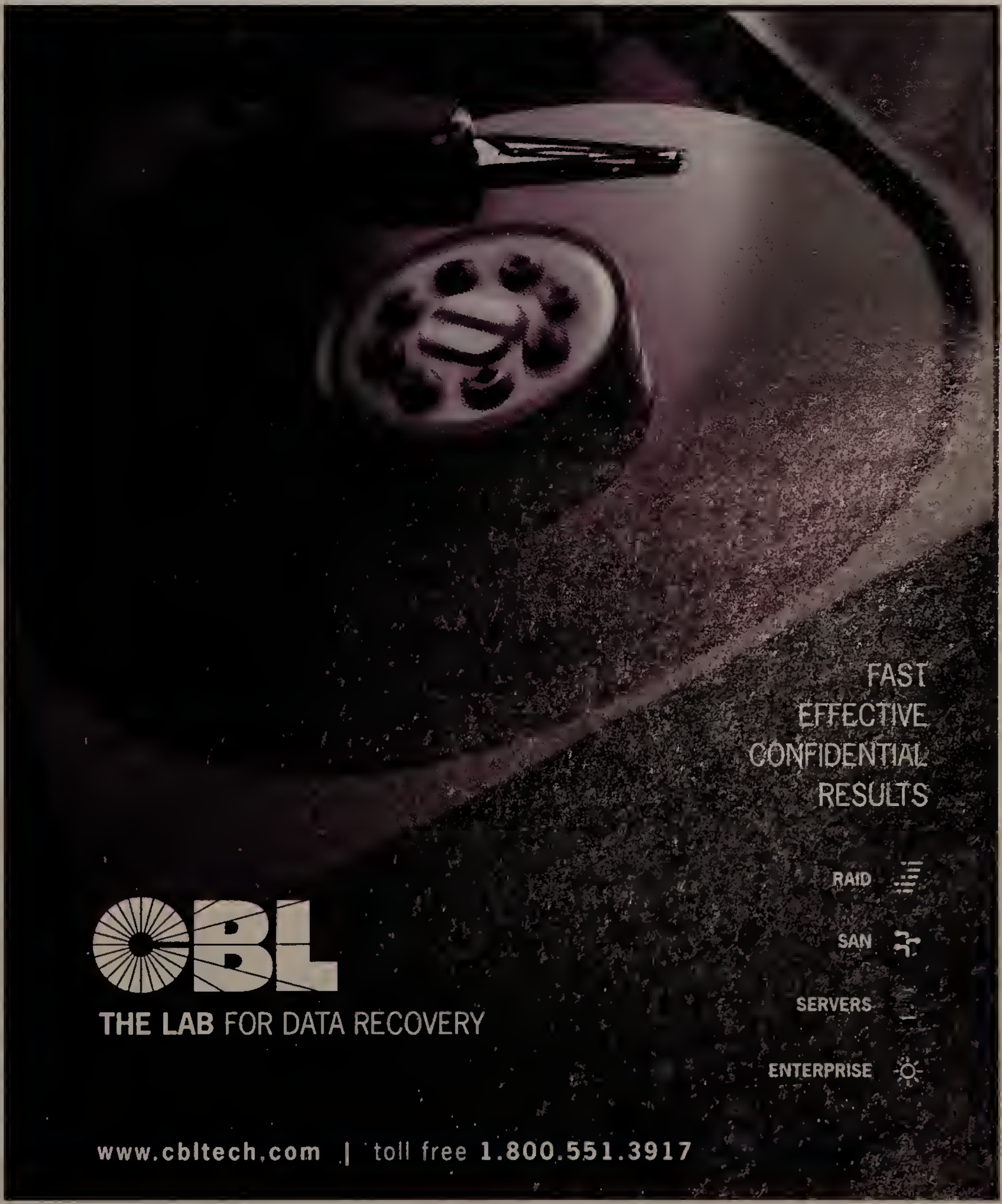

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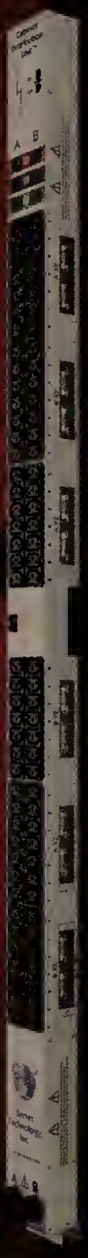

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Advertising Supplement

IT Careers in E-Business

Remember when the question was whether e-business would ever result in real dollars being earned by anyone? The question has been answered as industries have turned the Internet into a tool that is increasing revenue numbers.

Amazon.com and eBay have reported significant revenue and profit growth. Second quarter sales for Amazon.com were up 26% compared to a year ago, while eBay reported a quarterly revenue increase of 52%. The third and fourth quarters of 2004, traditionally best quarters for both entities, promise to continue the trend.

In addition, both have purchased international market share. EBay has completed the acquisition of Baazee.com, adding 17 million users in India to its presence. Amazon.com has announced the acquisition of Joyo LLT, and its access to 80 million customers in China.

A cadre of other businesses using e-business technologies joins the traditional e-tailers. Airlines are driving down overhead costs by turning to online sales of tickets, while some traditional brick and mortar retailers are combining in-store, catalog and online technologies to bring in customers. In addition, all retailers are turning to the use of radio frequency identification (RFID) to improve operations supporting those sales. IDC, the research arm of IDG, estimates that RFID expenditures will top $1.3 billion by 2008, when the one-time surge will return to earth.

Given all the good news, the priority question is what this means to IT professionals. The growth shows in a slow, but steady increase in jobs as well.

Both Amazon and eBay list a variety of jobs currently open with the vast majority in software development, and analysis. Amazon is shifting approximately 40 software development jobs to its new Software Development Centre in Scotland during the second half the year, but will maintain staffing in San Jose as well. EBay similarly has job postings in IT, to include software engineering and systems. The requirement for knowing customers and individualizing market to specific niche groups has created additional information technology requirements and staffing needs. This category includes data storage/management/mining, customer relationship management and self-service capabilities. What you don't see are core jobs in web development, but rather jobs that span the operation to provide solutions to the primary question – how to sell to an increasingly picky customer.

For more information about IT Careers advertising, please contact: Nancy Percival
Vice President, Recruitment Advertising
800.762.2977
500 Old Connecticut Path
Framingham, MA 01701
Produced by Carole R. Hedden

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IT PROFESSIONALS

Manager

(Glen Mills, PA and other locations throughout the United States). Responsible for the design, architecture and implementation of payment systems with primary focus on card processing and authorization systems, as well as back-end clearing and settlement systems. Implement architecture design involving intra/inter-enterprise integration, back-end integration, batch processes, data conversion for high performance scalable systems and adaptors implementations using tools included in payment system applications. Utilize Ab Initio data processing platform for batch data processing and complete meta data management across the enterprise. Utilize Enterprise Integration middleware tools (MQ Series or WebMethods) with build-in adaptors to submit data to various c-tree database. Utilize IBM Tivoli for system resource monitoring and Thales Hardware security module for cryptographic services. Responsible for planning engagements and leading teams in implementation of payment systems based on established industry standards (ISO 8583). Responsible for Managing integration and testing of payment systems using automated load and system testing tools (Mercury LoadRunner, WinRunner).

$100,895/year. Mon-Fri 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Engineering (any), Management (any), or Business Administration plus 5 years of experience in the job offered or 5 years of experience as an Analyst, Associate, Consultant, Senior Consultant or Programmer. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited credentials evaluation service. Related experience must include at least two years experience utilizing Card Processing & authorization systems, Back-end clearing and settlement systems, Programming Languages (C++, Java), c-Tree database, Mercury Load Runner, and Thales Hardware security module for cryptographic services.

Please send your resume, referencing Job Order Number **WEB450022** to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

***Chief Information Officer** position in large multi-platform data center responsible for providing leadership to high performance management team in complex social services agency.*

Represents agency in meetings with federal, state and legislative officials. Requires current technical experience and demonstrated expertise supporting IBM ES9000 MVS/ESA/IMS/DB2, UNISYS A19 MCP/ DMSII, AIX/Unix/Oracle, and LAN/Novell. Experience with internet applications design and development, desired. Background and experience with federal oversight agencies is highly desirable. Demonstrated success in public administration with associated regulatory and state oversight entities highly desirable. Requires interaction with stakeholders and external interested parties regarding complex, highly visible projects.

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Chief Information Officer

Requires effective interaction with customers and developers to ensure the successful delivery and implementation of projects, updates and modifications to the production environment. Must be able to work effectively with senior departmental managers as well as executives with other state agencies to achieve smooth and timely project development and conversion for clients. Desire strong background and demonstrated success in deploying productivity tools for workforce and agency processes. Responsible for charting agency strategic direction in client/server and distributed/decentralized processing. Qualifications: Excellent organizational, analytical, writing and public speaking skills are desired. A bachelor's degree from an accredited college or university and progressively responsible leadership experience in analytical and/or technical data processing fields. Prefer experience in a managerial capacity for a medium to large data center. Experience as described above can substitute on a year-for-year basis for the required college education.

Submit resume and/or State of Florida employment application to: Jo Moore, Department of Children & Families Technology Centre, 1940 North Monroe Street, Suite 80, Tallahassee, Florida 32399-0710; FAX (850) 487-8173; Jo_Moore@DCF.State.FL.US DEADLINE: 5 P.M., September 8, 2004. EEO/AA Employer/Veterans Preference. Those persons who require special accommodations during the selection process, should call Jo Moore at (850) 487-8169.

Computers-Software Engineers needed. Seeking qual. candidates possessing MS or equiv. and/or rel. work exp. Part of the req. rel. exp. must include 2 yrs. working with C/C++, TCP/IP and Linux Kernel. Duties include: Develop, design and test Mobile VPN, IPSEC, IP Layers modules and TCP/IP protocol device drivers; Integrate FIPS complaint security software and hardware components and hardware crypto cards; Work with C/C++, Intel Assembly and Linux Kernel. Fwd. resume & ref. to: Ecutel Systems, Inc., Attn: HR, 2300 Corporate Park Dr., #410, Herndon, VA 20171.

Database Analyst. Design, implement, maintain database, web pages, software tools and documentation for marketing and financial software applications. Must have Bachelor's in Information Systems, Accounting or related, 1 yr. exp. and knowledge of Microsoft SQL database programming, ASP programming, C, Visual Basic, HTML and Java programming. Send resume to Infinity Investments Inc., Attn: Jim Balvanz, 373 Collins Rd. NE, Cedar Rapids, IA 52402.

Senior Business Analyst. Harleysville Insurance Group, Harleysville, PA seeks individual to lead, manage & implement projects focused on re-engineering processes with focus on continued improvement. Qual. apps. must have MS in CS, Engineering or quantitative discipline and prior exp. gathering requirements, defining process improvements & working with end users. Submit res. to HR Dept resumes@imrlp.com.

Principal Software Engineer: Primary responsibility for the development of networking software. Responsible for functional spec dev, arch design, implementation and verification. MS or foreign equiv. in EE or CS plus 5 yr. exp. that must include 3 yr. with one or more network protocols including IP, TCP, ARP, DHCP, DNS, SNMP,and firewall. . Must be familiar with IP QOS protocols and RFCs. Must have development exp. with Linux. and in C/C++. Please send resume to Ucentric Systems, 2 Clock Tower Place, Suite 550, Maynard, MA 01754, Attn to Pat Riley.

Programmer Analysis to design, develop, test, implement appls using Siebel tools, C, C++, Java, ASP, Oracle, JavaScript, VB-Script, HTML, JDK, JDBC, Visual Basic, etc using UNIX and Windows OS; develop, enhance components of new/existing appls and databases; perform reqs gathering, analysis, planning, testing, implementation & troubleshooting. Require: BS or foreign equiv in CS or Engg(any branch) with 2 yr exp in IT. High salary. F/T position. Travel involved. Resume to HR, Smartsoft International, Inc., 3965 Johns Creek Court, Suwanee, GA 30024.

IT PROFESSIONALS:

POSITION: Consultant (Glen Mills, Pennsylvania and other locations through the U.S.). Develop new modules for the systems and trained developers. Provide assistance to the design, architecture and configuration management teams to resolve conflicts within the system, enhance the application infrastructure, maintain high quality standards and sustain stability of the system. Support the system during disaster recovery testing and expiration weekends. Monitor application stability and perform environment maintenance using IBM Web Sphere Application Server and Sun ONE Web Server. Assist senior designers in the design of reporting screens and work with a team of junior developers and analyst in the development of these reports and integration into the system using Brio Reports. Work with Java and Extensible Markup Language (XML) in developing the applications front-end using Java Server Pages (JSP's), Java servlets, Apache Struts framework, and control structures within the Java 2 Platform, Enterprise Edition (J2EE) framework. Use IBM's WebSphere Studio Application Developer 4.0 as the primary development tool. Work on the UNIX platform to develop CORBA components as the middleware solution to connect to C++ servers. Assist in the enhancement of time related performance by modifying Structured Query Language's (SQL's) in DB2.

WAGE: $74,751.70/year
Hours: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS:
Bachelor's degree in Computer Science, Business, MIS, or Information Technology + 1 year exp. in the job offered or 1 year exp. as a Consultant, Senior Developer, Senior Systems Analyst, Systems Analyst, or Junior Systems Analyst. Related experience must include at least one year of J2EE, JSP, and Java Servlets; Apache Struts Framework; IBM's WebSphere Studio Application Developer 4.0 and WebSphere Application Server; SQL and DB2; XML; and UNIX and CORBA.

Please send your resume, referencing Job Order Number WEB447883 to the: PA Careerlink, FLC Unit, 235 W Chelten Ave., Philadelphia, PA 19144. EOE.

Silicon Laboratories Inc. is hiring for the following position: Optical Networking IC Design Engr - Analog & digital circuit design for high-speed commun. apps. Min req: MSEE + 3 yrs exp in mixed-signal IC design. Openings in Nashua, NH and Austin, TX. Complete job description at www.silabs.com/careers. Send resume to jobs_er@silabs.com or HR Dept, 4635 Boston Lane, Austin, TX 78735. NO IN PERSON APPLICATION.

Sr. Systems Analysts to lead teams to analyze, design, develop, test, implement appls using Java, C++, VC++, VB, LabView, Matlab, MathCAD, Rational Rose, OOAD/P, UNIX etc; analyze, finalize architecture using RUP process, J2EE, UML; administer, deploy components into appl server-Websphere; develop appls as per ISO-9001, CMM level 3 methodologies; provide customer support & trouble-shoot. Require: Masters or foreign equiv. in CS/Engg. (any branch)/Business with 1 yrs exp. Travel Involved. Comp. Salary. F/T. Resumes: HR, Synergy America, Inc., 6340 Sugarloaf Parkway, Ste 140, Duluth, GA 30097.

Systems Analyst/Administrator, McLean, VA. Designs, develops, programs, installs, implements, conducts research for, & maintains Unix systems, servers & hardware. Duties include working with Solaris, Linux & other Unix Os, disaster recovery & backup, documentation, troubleshooting, security, web & application servers, SMTP, DNS, shell & Perl scripting. Bachelors in Comp. Sc./Elec. Engr. or in a related discipline & minimum 2 yrs related experience required. Send resume to Boyer Consulting Group, 7918 Jones Branch Dr. Suite 600, McLean, VA 22102.

Sr. Programmer Analysts to lead teams to analyze, design, develop appls using OOP, Java, JSP, Servlets, EJB, XML, HTML, JavaScript, Weblogic, JDBC, Oracle, etc in UNIX, Solaris, Windows OSs; develop Oracle stored procedures and data modeling; implement appls and perform strategic planning/operations support; provide end user training. Require BS or foreign equiv. in CS/Engg. (any branch) & 3 yrs exp. in IT. Comp salary, F/T, travel involved. Resume to HR, Ordusion Technologies, Inc., 3883 Rogers Bridge Road, Suite 504, Duluth, GA 30097.

Sr. Programmer Analysts: Analyze, design, develop, test, implement, software apps. for mortgage loan processing in Loanquest suite, Centura, Oracle, SQL Server, Crystal Reports and Microsoft Legacy/.NET. BS Comp. Sc/Information Tech/related field & 5 years exp., including at least 6 months exp. in job offered. Excellent communication skills-verbal & written. Excellent technical peer group to work with. Travel may be required. Send Resume to: J. Norris, Mortgageflex, 10151 Deerwood Park Blvd., Bldg. 400, Ste. 350, Jacksonville, FL 32256. No phone calls please.

Database Administrator. Bachelor's Degree in Computer Science or Engineering and 2 years experience required. Submit resume to Delia Agustin, 11718 Bedford Street, Houston, TX 77031.

Database Administrators to install, configure, maintain Oracle Appls and Oracle Dev. software; evaluate, design Oracle database structures/systems; analyze database reqs of existing/new appls; monitor, tune for optimal performance, backup/recovery strategy planning, troubleshoot problems; maintain security of databases, test, apply patches for new releases. Require BS or foreign equiv. in CS or Engg (any branch) with 2 yrs exp in database admin. Comp. salary. Travel involved. F/T openings in Elgin, IL & Lower Gwynedd, PA. Resume to: HR, Fourth Technologies, Inc., 585 Tollgate Road, Suite 1, Elgin, IL 60123. Specify location desired, JobID DB964 on resume.

Radian Information Systems is seeking system analysts, software engineers & IT consultants to work on ERP, data warehouse, mainframe using SAP, PeopleSoft, VB, ASP, Java Script, VSS, VBScript, Web Methods, Cognos, Unix, Oracle etc. BS/MS with exp. Contact Info@RadiantInfoSys.com. EOE.

Acro Service is hiring: Business/MIS/Programmer/System Analysts, Software, Electronics, Electrical, Industrial, Product Design, Mech, Test Engineers & Professional Technical Recruiters. BS/MS and/or exp. required depending on positions. Send resumes to jobs@acrocorp.com. EOE.

Computers - Sr. Programmer Analysts needed. Seeking qual. candidates possessing BS or equiv. and/or rel. work exp. Part of the req. rel. exp. must include 2 years working with JDA-MMS. Duties include: Develop & enhance current existing HOST & POS systems; Work with JDA-MMS, RPG/400, CL/400, RPG/ILE & Visio Technical. Exp. in retail industry preferred. Fwd resume & references to: Cabelas, Inc., Attn: HR, One Cabela Drive, Sidney, NE 69160.

Software Engineer, Applications - 8a-5p, 40hrs/wk. Dsgn, dvlp & implmt s/ware systms & solutions w/hardware interface using ASP, Java, Javascript, VB, Visual Script, Visual Interdev, COM, DCOM, SQL & HTML. Req. 1 yr exp in job offd or as IT Prof'l & Masters or equiv in Comp Applics/Sci/Engg, Info Systms, Electronics Engg or related field. In lieu of Masters, Bach deg in specified majors & 5 yrs progressive work exp in job offd or as IT prof'l accepted. Resume: Avalon International, Inc., 3550 Engineering Dr., Ste 260, Norcross, GA 30092.

OH Information Management Firm seeks Software Developer to program, develop and implement web based applications, customer incentive systems. Min 3 month in-job/job related experience including: ASP.Net; C#; VB Net; SQL Server; XML Web Services requested. Bachelor's degree in Computer Science, Computer Engineering. Resumes to: Human Resources, The Mail Room Inc. 711 West Smith Rd., Medina, OH 44256. No calls. EOE.

Database Analyst I & II: Ensure highest quality SAP BW implementation by providing expertise & guidance to clients through extensive on-site support; coordinate & design database; analyze requirements; performance tuning; oversee & implement security measures; create manuals & train end users. Travel req. Analyst I Req. BS in Comp. Science, MIS or related field & 1 year related exp. Analyst II Req. BS in Comp. Science, MIS or related field & 2 years related experience w/ implementation at client site. Competitive Salary. Send resume to Compendit, Attn. HR., 150 N. Michigan, Ste 3400, Chi, IL 60601.

Software Engineers to analyze, design, develop, test appls using Java, JSP, Servlets, EJB, XML, HTML, JavaScript, C, C++, Oracle etc under UNIX, Windows OS; provide architectural support, create and integrate product data stores into Siebel product module; perform Siebel CRM implementations and install Siebel servers/clients; Develop, enhance components of new/existing appls and databases; interact, train end users. Require: M.S. or foreign equiv. in CS or Engineering (any branch) with 1 yr exp in Siebel. F/T. Travel involved. Competitive salary. Resume to: HR, ABZ Consulting, Inc., 2600 Century Parkway, Ste100, Atlanta, GA 30345.

Stanford Technology Partners Inc. is an IT consulting company with its clients across the USA. We seek a Peoplesoft EPM Functional Consultant. Duties include reporting tool selection; Identifying legacy system reporting & architecture; conceptual sizing of hardware configurations for Peoplesoft reporting tools; creating conceptual design docs; assisting staff on docs, identifying gaps in source system, present EPM module to mgmt and team members for review and implantation. Job is located in Tallassee, Florida or unanticipated locations throughout the USA. If interested, please send resume to: STPI, 289 Boston Tpke #6 Shrewsbury, MA 01545 e-mail: recruiter@stpincusa.com

Maintenance all aspects of installation, testing, and managing network systems in the business area;testing of computer hardware and supervising of its installation; testing of computer systems, and related equipment. Resume A-Soft Scientific, P.O. Box 1270, Roswell, GA 30077.

Sr Programmer Analysts: manage teams to analyze, design, maintain software appls using J2EE, Java, JSP, ASP, HTML, XML, Oracle, SQL Server on Windows/UNIX OS; perform requirements analysis and conduct functional testing/debugging; document, maintain & update use cases, GUI design, BPR scenarios. Require: BS or foreign equiv. in CS/Engg.(any branch) and 2.5 years exp in IT OR MS in CS/Engg (any branch) and 6 months exp in IT. Travel involved. F/T position. Comp. salary. Resume to: HR, Quest America, Inc., 211 East Ontario Street, Suite 1800, Chicago, IL 60611.

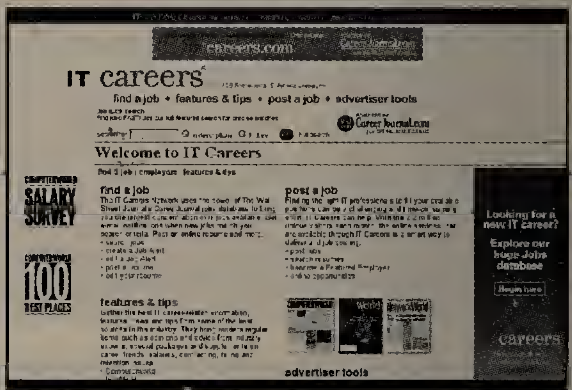
Programmer Analyst needed by Soft. Dev. & Conslt. Co. Dsgn, dvlp, maintain & implmt various applics using COBOL/400, RPG/400, CL/400, QUERY/400 & SQL/400. Job to be performed in Chicago, IL & various unanticipated client sites in US, as assigned. Req 2 yrs exp in job offd, 40hrs/wk, 9a-5p, M-F. Respond to CEO, Edgesys, Inc., 555 West Madison St, Ste 1-2311, Chicago, IL 60661

Jr. Programmer Analyst. Analyze, design, develop, & deploy web appl. Using SQL Server database, .NET Technology, & support Client Server/Web based appl. Using Visual Basic, COM/DCOM, SOAP, Visual C++, MSSQL Server, ASP & Java Scripts. Req: Bachelor in Comp. Sci., Comp. Eng.Or Electrical Eng. 40hrs/wk. Job/Interview Site: Fullerton, CA. Send resume to Reliance Technologies, Inc. @2501E. Chapman Ave.#280, Fullerton, CA92831

Oracle Financials Functional Consultant. Individual to deliver full life cycle implementation of Oracle E Business suite for firm's clients based in suburban Phila & other locations. Qual. applicants must possess BS in Accounting, Bus. or related field & 5 yrs. as Oracle Implementation Consultant. Submit res. & jobs refs . to HR, ThoughtDigital, Inc., 55 Grant St., Ste. 370, Pittsburgh, PA 15219. No phone calls.

Senior SAP BI Consultant

Ensure highest quality SAP Business Intelligence implementation by providing expertise & guidance to client through extensive on-site support; requirement analysis; technical design & architecture; realization & construction; deployment; iterative & incremental development. Travel req. BS in Comp. Science, MIS or related field & 3 years SAP exp. w/ multiple years SAP BI implementations. Competitive Salary. Send resume to Compendit Attn HR, 150 N. Michigan, Ste 3400, Chicago, IL 60601.



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Programmer 1. Under supervision, design and implement applications and database support tools using Java, JSP and stored procedures development environment; maintain and oversee the coding standards; provide technical support for resolution of customer issues; and function as mentor to other Software Engineers on development standards and methodology. Must have Bachelor's in Computer Science, Engg. or related, 1 yr. exp., and experience must include working with Java, JSP, Struts, XSLT, Websphere, ClearCase, Rational Rose and Crystal Reports. Send resume to Praxis Technology Group, LLC, Attn: Mark Loomis, 1500 NW 118th St., Des Moines, IA 50325.

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IT PROFESSIONALS

Manager

(Glen Mills, PA and other locations throughout the United States). Lead strategy and operations consulting engagements for global financial services clients, including finance transformation, re-engineering, operations enhancement, logistics transformation, merger & acquisition strategy, strategic sourcing, product strategy, and eProcurement implementation. Support sales and proposal development efforts. Meet with clients to assess business requirements and strategic goals. Lead planning efforts: scope definition, staffing, work-plan and budget management Oversee execution of project teams and initiatives, including supervision of subordinate consultants. Responsible for project management of assigned components: issue resolution, status and budget tracking/reporting, report/presentation development, management of research efforts, quality assurance, team management, and performance reviews. Interact with senior client management to provide status updates and address critical project issues. Lead formulation and presentation of key findings and recommendations to clients on operational, financial, and strategic issues. Supervise and lead enterprise-wide implementation of identified opportunities. Establish post-implementation profitability/savings tracking and performance benchmarking mechanism.

$135,000/year. Mon-Fri 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree in Economics, Business, Finance, or Mathematics plus 5 years of experience in the job offered or 5 years of experience as a Senior Consultant, Consultant, Analyst, or related occupation. Related experience must include international work in financial services industry, management of cross-functional teams, and enterprise-wide implementations, and demonstration of client relationship development and growth within leading financial institutions.

Please send your resume, referencing Job Order Number WEB447909 to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

SAP BI Project Manager

Ensure highest quality SAP Business Intelligence implementation by providing expertise & guidance to client through extensive on-site support; understand needs & req'ts of business process; As SAP BI PM; provide direction to both consultants & clients; provide knowledge of SAP product implementation via BI strategy engagements & BI implementation projects; enable clients to get the most out of SAP BI investment; develop task schedule & coordinate activities based on meeting specific req'ts. Travel req. BS in Comp. Science, MIS or related field and 4 years SAP exp. w/ multiple years SAP BI implementations & project mgmt exp. Competitive salary. Send resume to Compendit, Attn: HR, 150 N. Michigan, Ste 3400, Chicago, IL 60601.

Sr Software Engineer. Design & implement s/ware apps. Masters or equiv in CS or similar major. Will accept bachelors plus 5 yrs progressive exp in s/ware eng'g or analyst position in lieu of a masters. Prior exp or edu must include Java, J2EE, and WebObjects. Contact JR Scholl, HR Generalist, Job #1915.36, Academic Mgmt Svcs, 463 Swansea Mall Dr, Swansea, MA 02760.

Programmer Analysts, Database Administrators, Engineering Programmers, Software Engineers needed--mult openings in locations throughout the US with at least one year exp in any of the following:
- C or C++, UNIX
- Perl, Oracle, UNIX
- QA Analyst
- Oracle Developer
- Java Developer
- Visual Basic, ASP, SQL Server.
- SAP
- Oracle Financials· PeopleSoft
- Unix or NT Administrator

Unified Business Technologies, Inc. ATTN: Human Resources 41400 Dequindre Road, Suite 105Sterling Heights, MI 48314 An Equal Opportunity Employer

Luceo, Inc. seeks Programmer based out of our Naperville, IL loc. Design, code, test, implement, & maintain new/revised programs, web pages, scripts, database applications, reports, new networks, network based applications & other software. Use SQL server, .Net framework, HTML, XML, WMI, ASP, VB Script and Dreamweaver MX. Windows NT/2000/2003 servers; networks, TCP/IP & other LAN/WAN protocols; Active Directory & Exchange; Perl script, TCL/TK & Shell scripting in UNIX. Some travel required. Must have Bachelor Information Systems, Business Administration or related + 2 yrs relevant exp. Resume to Luceo, Inc., 1431 Kallien Avenue, Naperville, IL 60540.

Sr. Systems Analyst/Project Mgr. needed to lead analysis of client bus. process/acctg. requirements for implement. of custom ERP business/acctg. software. Requires degree + exper. & Microsoft Navision Axapta certification. Exper. must incl: Axapta X++ programming; Functional Requirements & Gap-fit anal. reporting; demonstrated understand. of gen. acctg. procedures. Based in Menlo Park, CA - Travel up to 80% in N. CA. Send resume to: S. Mauser, Specialists in Custom Software, 2120 Colorado Ave., Suite 150, Santa Monica, CA 90404. Must be able to work without employer sponsorship.

Programmer Analysts to analyze, design, develop appls using: C, VB, JavaScript, HTML/DHTML, EJB, JSP, ASP, Servlets, UML, Oracle, SQL under Windows OS; perform initial study of req and provide feedback; provide on site maintenance support, debug, modify, fine tune and perform code optimization. Require: BS or foreign equiv. in CS/Engg.(any branch) & 2 yrs of exp. in IT. Comp. Salary. Travel Involved. F/T. Positions available in Elgin, IL& Lower Gwynedd, PA. Resume to: HR, Fourth Technologies, Inc., 1108 N. Bethlehem Pike, Suite8, Lower Gwynedd, PA 19002. Specify location desired & JobID PA964 on resume.

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SENIOR WEB DEVELOPMENT ANALYST

ADT Security Services, Inc. has an opening in Boca Raton, Florida for a Senior Web Development Analyst.

Analyze business procedures and problems to develop specifications and convert them to programmable form for electronic data processing. Confer with organizational units involved to determine specific web output requirements. Study existing data systems to evaluate effectiveness and develop new, or modify current, web systems to improve production workflow.

Must possess at least a bachelor's or its equivalent in Computer Science or a related field, and relevant work experience. Experience must include Oracle, SQL and WebSphere Administration.

Resume and/or cover letter must reflect each requirement above and specify reference code SWDA/ZHS or it will be rejected.

Forward resume to Theresa Maia, ADT Security Services, Inc., One Town Center Road, Boca Raton, FL 33486.

IT Analyst I

Roxane Laboratories, Inc. has an immediate opening in its Columbus, Ohio office for the position of IT Analyst I.

Assists with maintaining codes for new systems, builds install packages, ensures that all solutions are implemented in a timely manner and properly tested, edits application component functional specifications and technical design documents and assists with web development.

Must possess a Bachelor's degree in Management Information Systems, Business, Computer Science or a related field and relevant experience, including college course/project work and/or work experience with PowerBuilder, Enterprise Java Bean, C# and Delphi.

Resume and/or cover letter must reflect each requirement above and specify reference code AD-GCD/GC0804 or it will be rejected.

Forward resume to BI Staffing Center, PO Box 534, Waltham, MA 02454. Fax number: (781) 663-2431. Email: BIPI@BI-careers.com. EOE.

Database Administrator. Design, install, administrate and maintain SQL server database running warehouse application system on SQL 2000. Develop and support company web based and SQL based application using NET, ASP, Java, VB and Access. Perform day-to-day SQL Server DBA activities. Prepare project plan and schedules, and ensure implementation of projects. Test new application programs/modification to ensure technical applicability and specification compliance. Require Bachelor Degree in Computer Science or a related field with minimum of 4 years related experience. Apply to: Pleaser USA Inc., 679 S. Placentia Ave., Fullerton, CA 92831, Attn: Ms. Fong.

SOFTWARE ENGINEERS (12 positions): require Bachelor's or equivalent in Engineering/Computer Science/Mathematics/Science or closely related field with two years experience providing skills in described duties, at $79,000 per year. Provide on-site consulting in design, analysis and development of software for legacy systems in IBM mainframe environment; development and administration in Oracle, DB2, SQL Server and Sybase; e-commerce and web systems development in Microsoft, Java and related technologies; network management systems development with Netscape Server and related tools; SAP R/3 application systems on Windows with DOS and ABAP/4 and related modules. 40% travel to client sites in the United States. Mail resumes to: YASH Technologies, Inc., 605 17th Avenue, Suite 1, East Moline, IL 61244.

Programmer, Engineering - 8a-5p; 40hrs/wk. Integrate construction mgmt & civil engg s/ware w/Oracle to achieve optimum inventory mgmt, procurement planning; convert technical specs to flow charts, modules, prgm using comp aided drawings, Oracle & Developer 2000; test prgm. Req. Bach or equiv w/major in Comp Sci/Engg, Electronics, Electrical, Civil or related field of Engg. & 1 yr exp in job offd or as Systms/Software/IT Prof'l using above comp skills. Resume: Nextgen Infotech, Inc., 2090 Beaver Ruin Rd., Ste. 500, Norcross, GA 30071.

IT PROFESSIONALS

Consultant

(Glen Mills, Pennsylvania and other locations throughout the U.S.). Implement Supply Chain Processes in areas such as demand planning, inventory planning & management, production planning & operations, material replenishment, and logistics. Conduct the "as-is" analysis of client's current processes and systems, utilize industry best-practices, and design the "to-be" processes. Salary is $78,686per year. Mon-Fri, 9:00 am to 5:00 pm. The position requires: Bachelor's degree in Business Administration, Engineering (any), Information Systems, Math, or Computer Science + 2 years of experience in the job offered or 2 years of experience as a Consultant, Systems Analyst, or Assistant Manager Related experience must include at least 6 months of: Supply Chain Processes and Systems including: "as-is" analysis, "to-be" design, demand planning, inventory planning & management, production planning & operations, material replenishment, and logistics.

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VPLS

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However, Verizon has successfully trialed VPLS in its lab and could offer services based on it within 10 to 24 months, a spokesman says. SBC offers point-to-point Ethernet services now, but by adopting VPLS it also plans to offer point-to-multipoint. Other carriers such as Time Warner already offer VPLS services, and Pennsylvania provider TelCove says it plans to offer them soon.

VPLS is in the final stages of review by the IETF, and once it is approved, equipment vendors such as Alcatel, Cisco, Extreme Networks, Foundry Networks and Riverstone Networks that have already produced VPLS gear based on drafts of the standard can work toward interoperability. This is important to carriers that don't want to be locked into buying equipment from a single vendor. Approval is anticipated by early next year at the latest, says Marc Lasserre, co-author of the VPLS proposal and chief scientist for Riverstone.

Once the standard is in place, service providers would consider the technology more seriously as a solid base on which to build new services, says Mark Bieberich, an analyst with The Yankee Group. "You will see some of these Tier 1 service providers commit to VPLS offerings within six to 12 months," he says.

Meanwhile, two smaller U.S. carriers already offer VPLS services, Masergy in Dallas and SureWest in Roseville, Calif. These companies have the advantage of not having existing data service offerings that VPLS would compete against, says Erin Dunn, an analyst with Vertical Systems Group. VPLS doesn't cut into their existing accounts and doesn't require phasing out other technologies such as TDM, frame relay and ATM.

Another drawback for carriers is that the service requires Ethernet connections from customer sites to carrier points of presence, and Ethernet is far from universally available. "The likelihood of finding a service provider with Ethernet access everywhere you need it is unlikely," Dunn says.

Part of the problem is that high-bandwidth Ethernet access requires fiber, and that resource is available mostly in cities. Masergy expands its service area by using devices that carry Ethernet over copper wires instead. Tasman Networks' gear presents customers with two Ethernet ports and can plug into a T-1 or T-3 on the WAN side, running Ethernet over the wire via point-to-point protocol, says Jim Brunetti, Masergy's director of engineering.

Because copper has a slower top speed, using it limits the top speed of Ethernet services that can run over it. On fiber, speeds can reach 1G bit/sec.

Coming attractions

One of the major attractions of VPLS-based services is that they cost less for more bandwidth than other transport services. For example, a customer upgrading a T-1 frame relay network to a 10M bit/sec Ethernet service would get nearly seven times the bandwidth for just double the price, says David Parks of The Yankee Group.

It's possible to offer VPLS-like services using Ethernet access and MPLS backbones without actually using VPLS. For example, Verizon offers Transparent LAN Service (TLS), which can create multipoint-to-multipoint LANs in metropolitan networks, but not between metropolitan networks, says Vin Alesi, a distinguished member of technical staff for the carrier's data services architecture group. TLS can unite two or more metropolitan Ethernet LANs via a point-to-point link, but they remain separate islands and do not afford truly meshed connections, he says. Traffic can get between the islands but not be directly routed to individual machines. VPLS would enable this LAN emulation across wide areas, not just metropolitan regions, Alesi says.

Beyond supporting fully meshed networks, VPLS eliminates the need for customers to share Layer 3 routing information with their carriers, which can be a headache or could violate corporate policy. With MPLS VPNs, for instance, customers must route their traffic into their providers' networks and deal with advanced routing protocols such as Border Gateway Protocol.

With VPLS, they deal with the services as if it were part of their Ethernet network. The demarcation point can be an Ethernet switch rather than a router.

Bigger site support

Another plus is that VPLS makes it possible to support very large numbers of sites. As demand for Ethernet services grows, the underlying Ethernet mechanisms for separating traffic become limited by the number of VLANs a network can support, about 4,000. VPLS defines the means to extend that number into the millions, which makes it likely that more carriers will support VPLS as Ethernet services grow in popularity.

Ethernet services in the U.S. generated less than $500 million in carrier revenue this year, and VPLS is an insignificant amount of that sum, says Dunn, but she projects that Ethernet services revenue will grow to $1.3 billion by 2007. This includes point-to-point and metropolitan Ethernet services from SBC, Verizon and BellSouth.

VPLS also can offer separate service quality to different applications, which would be key to running VoIP on these networks, Parks says. And VPLS gives carriers controls to offer strong SLAs.

As carriers consider VPLS, they are looking for a way to make it compatible with other Layer 2 access technologies such as ATM and frame relay with Ethernet access, Parks says. That means one site could be connected to the MPLS network via frame relay, another via Ethernet and a third via ATM, and all three sites could connect with the others over an MPLS backbone. This would let carriers that already have frame relay and ATM customers migrate them gradually rather than forcing a change to Ethernet at all their sites. SBC says it wants to offer such services and has the means to do so using Cisco switches.

Even when all the bugs are worked out of VPLS, the popularity of other new technologies such as IP VPNs could hold back VPLS. "I don't think VPLS will ever achieve the status of frame relay," Parks says.

Senior Editor Denise Pappalardo contributed to this story.

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The skinny on VPLS

Virtual Private LAN Service technology tries to overcome some of the inherent shortcomings of WANs, namely complexity, limited bandwidth and application performance degradation.

VPLS combats complexity by presenting corporate networks with an Ethernet interface they plug into their routers or switches and then simulating a LAN routing environment among corporate sites.

Because access to VPLS is Ethernet, bandwidth can scale in increments of 1M bit/sec up to the speed of the wire, giving customers the option to buy the bandwidth they need to provide the performance they want.

Performance degradation can be overcome by use of QoS features of Multi-Protocol Label Switching (MPLS), VPLS' underlying backbone technology.

VPLS combines the Layer 2 nature of Ethernet with Layer 2 MPLS label-switched paths to create the impression of a circuit known as a pseudo-wire. These customer pseudo-wires are mapped through MPLS label-switched paths across the carrier backbone.

Traffic from individual servers and desktops in customer networks is switched based on their media access control addresses, with the providers' edge routers keeping track of them and making sure traffic from them is switched along the appropriate paths.

VPLS defines the encapsulation of traffic from the Ethernet access segment of the network to the MPLS core to maintain service quality needed to maintain acceptable application performance.

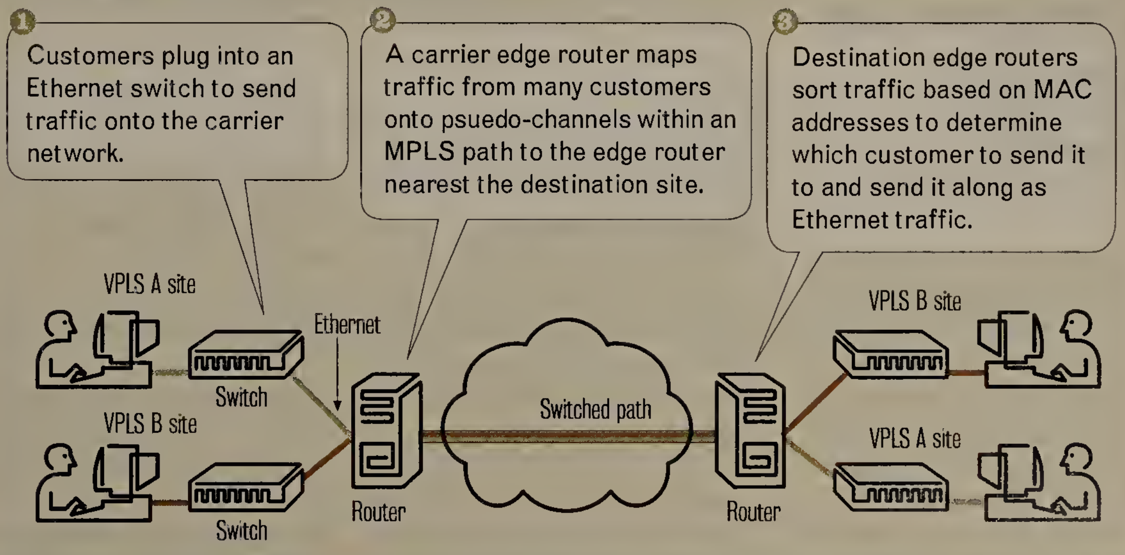
By creating a fully routed environment, VPLS provides any-to-any, fully meshed networks. To create similar networks using dedicated circuits, frame relay or ATM involves complex network design and multiple permanent virtual circuits, which can be expensive.

Simplifying fully meshed networks for customers is a benefit of VPLS, but it requires work on the carrier's side to set up the full mesh of label-switched paths among its edge routers. It also requires provisioning each customer's service within these paths. Several groups are working on standards for managing VPLS networks to make the task easier for service providers.

— Tim Greene

How VPLS extends LANs

Virtual Private LAN Service customers send traffic among sites as if they are all on the same LAN.


① Customers plug into an Ethernet switch to send traffic onto the carrier network.
② A carrier edge router maps traffic from many customers onto psuedo-channels within an MPLS path to the edge router nearest the destination site.
③ Destination edge routers sort traffic based on MAC addresses to determine which customer to send it to and send it along as Ethernet traffic.
VPLS A site
Switch
VPLS B site
Switch
Ethernet
Router
Switched path
Router
VPLS B site
VPLS A site

Impersonators

continued from page 1

“It's weird, it's like, it's me.”

Gates look-alike **John Ranlett** says when he sees the real Gates it's like an out-of-body experience.

younger than the 5-foot-11-inch, 48-year-old Gates, charges a minimum of $2,500 per appearance but makes more for film work and commercials. Nevertheless, he has no plans to end his career as a civil design engineer.

Ranlett, a bus driver, often navigates a route that slices through the Microsoft campus in Redmond, Wash. His personnel file includes a letter that prevents him from identifying himself as Gates lest passengers get confused, excited or hostile.

“People think they are talking to Bill, and they just start shaking.”

Steve Sires
Bill Gates impersonator

But away from the bus Ranlett over the past seven years has used his likeness to Gates to land parts in a TV commercial with Donald Trump and a music video for the song “Pentium” by Weird Al Yankovic. His financial gains have picked up in the past three to four years, he says, but not enough to make it a full-time gig.

Ironically, Ranlett and Sires are devoted iMac users. Neither has met Gates, though Microsoft has hired them as stand-ins on video shoots and for promotional stunts.

Ranlett once dressed up in an MSN butterfly costume and passed out CDs in Bellevue, Wash., which borders Redmond.

“I don't know why Bill didn't want to get into it,” Ranlett says.

Sires, who has trademarked his gig as Bogus Bill 2.0 and Microsortof, also has done four in-house videos for Sun. “They like to poke fun at Bill,” he says.

Both men say they have limits and won't do anything that puts Gates in a bad light, although Sires pushed the envelope when he played the Microsoft founder in a 2002 “mockumentary” about police misconduct and cover-up in Los Angeles called “Nothing So Strange.” In the graphic opening scene, Gates/Sires is fatally shot in the head by an assassin and lies bleeding in the street.

“It wasn't morally in question. It didn't put Bill's name in a bad light, so I had no problem doing it,” Sires says. He still gets hired by Microsoft even though a company spokesman was quoted after the movie's release saying, “It is very disappointing that a moviemaker would do something like this.”

Sires says the moviemaker, Brian Flemming, still gets asked how he ever convinced Gates to appear in the film.

Ranlett says he turned down a chance last summer to be in a Fox feature film. The catch was that he would have to get terrorized by rabid Rottweilers and a band of psycho clowns.

“I was suppose to sit behind a desk and this guy comes in and he is ticked off because he has to keep buying upgrades and new computers to run the upgrades and then the dogs and clowns come in and tear him apart,” he recounts. “I thought that fit in the mean-spirited category and I won't do that.”

Both men have done plenty of other gigs as Gates, though it is their everyday encounters with the public in which things turn surreal.

The real Bill. Bill Gates is pictured in the center photo. The photo on the left is impersonator Steve Sires, on the right is impersonator John Ranlett.

“People think they are talking to Bill and they just start shaking,” Sires says. “They want to tell you what they have done, they ask you for advice. It happens in the weirdest places. Why would people think Bill Gates is shopping at Costco or eating at KFC? It's crazy.” He says the most common question is about borrowing money.

Sires didn't know who Gates was until people started pestering him with questions. In 1998, his wife gave him a newspaper ad searching for a Bill Gates look-alike, which he promptly threw away. But his wife answered the ad for him.

“The best part is that you get to meet a lot of new people and I get to go all over the world,” Sires says.

Ranlett, who enjoys remodeling his house, being outdoors and watching World War II documentaries, says he loves the work and has fun with the resemblance.

“I did a Christmas party once, and an old lady sat next to me and told me how much she admired me and what I had accomplished in my life.”

Out of respect for the woman, Ranlett fessed up to his actual identity.

One day while walking near the Microsoft campus, a woman stopped her car in traffic and jumped out to take his picture. And once while sitting near the front row for a presentation by Gates friend and bridge rival Warren Buffett, he called out to those staring at him, “I'm Bill's cousin Billy Bob from Tennessee.”

But Ranlett, who is the same height but two years older than Gates, admits that sometimes when he sees the billionaire it is like an out-of-body experience. One day he was on the Microsoft campus working on a video shoot and Gates walked across the hall about 30 feet in front of him.

“It's weird, it's like, it's me,” he says.

Stranger yet, Ranlett says a co-worker of his looks like Microsoft co-founder Paul Allen.

“He looks more like Paul Allen than I look like Bill Gates. What are the odds?” ■

Feds seek software assurance

■ **BY GRANT GROSS**

WASHINGTON, D.C. — U.S. government agencies need to better understand the vulnerabilities of the software they're buying, said IT workers from several government agencies during a software assurance forum in Washington, D.C., last week.

The forum, sponsored by the Department of Defense and the Department of Homeland Security, was the first step in a long-term discussion between government agencies and vendors on how to create more secure software, said Joe Jarzombek, deputy director for software assurance in the Defense Department's Information Assurance Directorate and one of the event's organizers.

The forum was prompted by “a growing awareness of the fact that we've got a lot of vulnerabilities in the software we're acquiring,” Jarzombek said.

A major concern among government IT workers is a need to understand how and where software is developed. In many cases, outsourced workers developed the software that government agencies use, Jarzombek said, and government purchasers need to know that information. “We are essentially inheriting risks we don't know about,” he said. “We need to better understand those risks. When we put software into our network we are placing an agent of whatever company developed it on our networks.”

Jack Danahy, CEO of security software company Ounce Labs, compared the software defense agencies buy to the employees they hire. Government agencies can run background checks on employees, he noted. “There is no means to get [security] clearance for an application,” he said. “You never get to do a background check.”

The two-day meeting, closed to reporters, was attended by about 230 people, including employees of the FBI, State Department and CIA. Microsoft and Oracle were among the software vendors represented.

Danahy, who moderated a panel discussion on vendors and agencies working more closely together, said the forum showed an interest from government agencies to become more active in purchasing decisions. “It was very clear that software assurance was top of the mind for these people,” Danahy said. “The software companies recognize that everything they do is going to help, but this problem is by no means close to being solved.”

Software developers should expect more security demands from customers in the near future, says Mike Rasmussen, principal analyst Forrester Research. Government agencies are under pressure from Congress to improve their cybersecurity, and agencies are moving toward making more security demands of software vendors.

A second software assurance forum is planned for February.

Gross is a correspondent with the IDG News Service.

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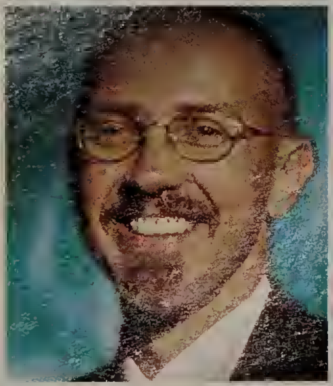

SCO's case doesn't fit, but the lawyers won't quit

Last week The SCO Group held its quarterly earnings conference call and announced it will cut expenses to ensure it will have enough cash to pursue its lawsuit against IBM. Apparently the company burned through $18.6 million with a third-quarter loss of $7.4 million on revenue of $11.2 million. Of that total, $7.2 million was in legal expenses.

SCO now has $42 million in cash left and has cut a deal with the law firm Boise Schiller and Flexner to cap its legal fees at a maximum of $31 million in return for the legal lads getting a bigger cut of the spoils should they win.

Last week on Network World Fusion (www.nwfusion.com, DocFinder: 3548), SCO's CEO Darl McBride was quoted saying he blamed the "company's ongoing litigation with Linux vendor Novell, Inc. for the SCOsource division's poor performance during 2004." McBride also said, "We continue to believe that Novell's claims have greatly impacted our ability to achieve traction in this business."

Indeed. Traction. McBride is prone to the creative abuse of words — for example, "The litigation business is now in control from a cost standpoint."

The company is just being its usual manipulative self. Could it be that SCO's reality is so distorted by its own corporate greed that it can no longer distinguish between the spin and the real world?

According to *The Wall Street Journal*, the spin doctoring is in full swing, with the lawyers now saying that the General Public License (GPL) is invalid — and I'm not making this up — because it is pre-empted by U.S. federal copyright law!

The argument (if the term can be applied to such convoluted and obviously calculating flim-flam) is that the amended copyright law only lets a user make one back-up copy of software. This, the lawyers argue makes the GPL void under U.S. law.

Now (and this probably won't surprise you), I am not a lawyer but wasn't that amendment designed to extend user's rights rather than limit them? In other words, it didn't say you couldn't copy, it said you could make limited duplicates for back-up purposes.

How, then, can that amendment be considered to limit the GPL when the amendment was intentionally permissive rather than restrictive?

What I find interesting is that an otherwise prestigious law firm would be so willingly involved in a case that is so transparently artificial, but I guess this is the kind of behavior that makes all those lawyer jokes so funny.

This defense is as ridiculous as when, in the farcical O.J. Simpson federal case, he made it appear it was really, really difficult to put on those gloves, thus "proving" the gloves weren't his. Defense lawyer Johnnie Cochran then intoned, "If the glove doesn't fit, you must acquit."

Interestingly, it turns out that those little rhymes have a reason: In a study conducted in 1998 psychologist Matthew McGlone at Lafayette College in Pennsylvania gave students a list of rhyming aphorisms along with non-rhyming analogs such as "Woes unite foes" and "Misfortunes unite foes." McGlone found that the students rated the rhyming aphorisms as the more accurate descriptions of human behavior.

McGlone called it the "rhyme as reason" effect. Curiously, the effect vanished when he asked the students to first evaluate the aphorisms' "poetic quality." Once the students did they no longer automatically associated the sound of the phrase with its truthfulness.

Don't be surprised if sometime in the near future you hear SCO's lawyers coming out with something like "If the code was a rip, you must not acquit" or maybe "McDarl is right, it is SCO's code byte for byte."

Perhaps the lawyers should more accurately intone "If the code was lifted, our firm must be gifted." And the worst part? Even if SCO loses, the lawyers still win.

No more lawyer jokes to backspin@gibbs.com. They are too depressing.

Compendium

By Adam Gaffin

Sound familiar?

Bryce Yehl makes a trip over to OfficeMax to pick up some cheap shelving for the five more used servers he's bringing home. But now he needs some GigE cards with 802.1Q support for a network segmentation project: ". . . the goal being to split things up so that the roughly 17 networked devices in the house have limited exposure to each other, hopefully stopping worms and malware from spreading. Newegg has the TRENDnet TEG-PCITXR for $12.99, which sounds like a winner." Read more of his account at www.nwfusion.com, DocFinder: 3530.

Today's best waste of time

Crunch Time is the game to play when your co-workers are out of control: "You know that feeling when all their brains have exploded and they have been transformed into blood-thirsty zombies, infected by an intergalactic computer virus disguised as a check-this-out mail attachment?" Uses Flash. Play it at DocFinder: 3532.

Sun's full-time blogger

Any Sun employee who wants one can get a free Weblog via the company's Java-based Roller blog aggregator. Last week, the company hired a full-time employee, Dave Johnson, to develop and deploy the software. Read all about it at DocFinder: 3533.

Gmail as file system

So what do you do with a gig of storage? If you're Richard Jones, you figure out how to use Google's new e-mail system, which gives users that much storage, to store files: "GmailFS provides a mountable Linux file system which uses your Gmail account as its storage medium. GmailFS is a Python application and uses the FUSE userland file system infrastructure to help provide the file system and libgmail to communicate with Gmail. GmailFS supports most file operations such as read, write, open, close, stat, symlink, link, unlink, truncate and rename. This means that you can use all your favorite Unix command line tools to operate on files stored on Gmail (such as cp, ls, mv, rm, ln, grep etc. etc.)." DocFinder: 3534.

Feelings, nothing more than feelings!

"Who should work with whom?" is a paper that posits the notion that personality may be more important than technical skills in determining the success of large software-development efforts. The authors conclude that determining the scores of potential development team members on the Myers-Briggs test should be considered as carefully as the development skills of those team members:

"IS managers should consider selecting personnel so there is personality heterogeneity between the team leader and other team members in the social-interaction and information-gathering dimensions. Thus, the project leader and members should be selected such that all four of these personality categories are represented: extrovert-intuitive, extrovert-sensing, introvert-intuitive and introvert-sensing . . ." Read the whole thing at DocFinder: 3536.

End users

Mike McBride loves his end users, but sometimes . . . He recalls when a department head came "this close" to buying a database upgrade without involving IT: "One of the first things I discovered when I took a serious look at the upgrade he was selling was that the technical specifications for both client and server side of the database were beyond anything we had in the building at that time! In all those meetings and conversations, no one had bothered to check that out. We were seriously considering the purchase of a database system that we couldn't even run . . ." Read more at DocFinder: 3550.

Have no fear, 'Net Buzz returns next week! You'll normally catch Gaffin online at www.nwfusion.com/compendium/.

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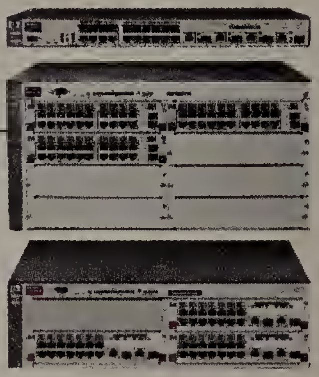

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